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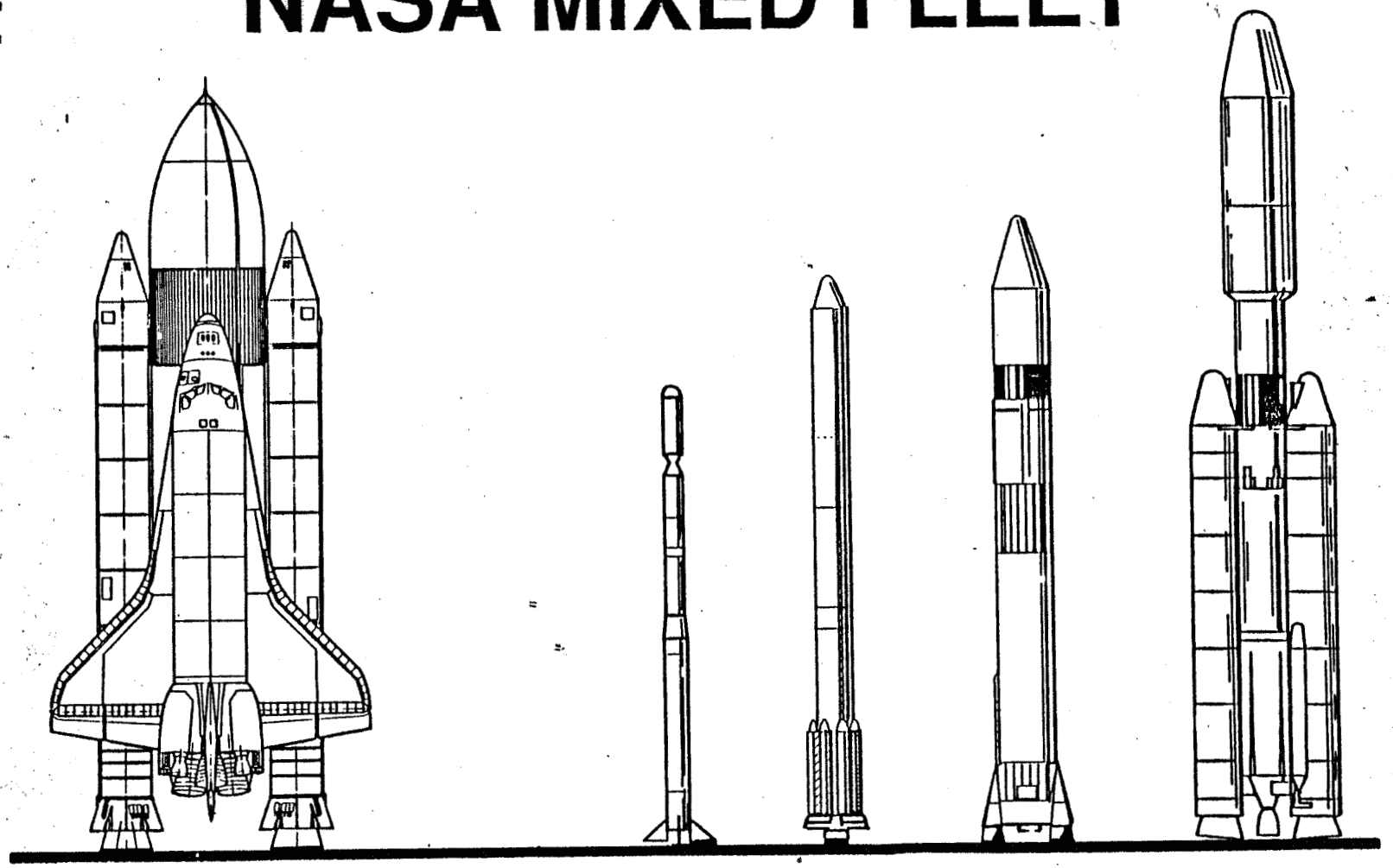
PAYLOAD FLIGHT ASSIGNMENTS
NASA MIXED FLEET



NASA

National Aeronautics and
Space Administration
Office of Space Flight
Washington, D.C.

JUNE 1989

PAYLOAD FLIGHT ASSIGNMENTS

NASA MIXED FLEET

JUNE 1989

SUBMITTED BY

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SECTION 1

MIXED FLEET MANIFEST NOTES AND SUMMARY

MIXED FLEET MANIFEST NOTES

- THIS MANIFEST INCLUDES PAYLOAD ASSIGNMENTS FOR SHUTTLE AND EXPENDABLE LAUNCH VEHICLE (ELV) FLIGHTS THROUGH FISCAL YEAR 1995.

- THE MANIFEST SERVES AS A BASELINE FOR PLANNING PURPOSES. FIRM PRIMARY AND COMPLEX SECONDARY SHUTTLE PAYLOAD ASSIGNMENTS ARE MADE DURING THE FORMAL INTEGRATION PROCESS APPROXIMATELY 19 MONTHS PRIOR TO LAUNCH. OTHER SECONDARY PAYLOAD ASSIGNMENTS ARE FORMALIZED 12 TO 5 MONTHS PRIOR TO LAUNCH.

- THE MANIFEST INCLUDES COMPLEX SECONDARY PAYLOADS. OTHER SECONDARY PAYLOADS ARE SHOWN ONLY FOR FLIGHTS ON WHICH THEY ARE FORMALLY ASSIGNED. SECONDARY PAYLOADS ARE IDENTIFIED IN THE PAYLOAD REQUESTS, SECTION 5.0.

- THROUGHOUT THIS DOCUMENT, PENDING REQUIREMENTS ARE NOTED "FOR NASA PLANNING PURPOSES."

- THE MANIFEST SUPPORTS THE COMMERCIAL SPACE INITIATIVE ANNOUNCED WITH THE NATIONAL SPACE POLICY, FEBRUARY 11, 1988.

- SHUTTLE FLIGHT OPPORTUNITIES ARE INCLUDED IN THIS MANIFEST. USE OF THESE BY PAYLOADS WHICH SLIP OUT OF THEIR PLANNED TIME FRAME WILL MINIMIZE MAJOR MANIFEST REVISIONS, RESULTING IN GREATER SCHEDULE STABILITY IN PAYLOAD PROGRAMS.

MIXED FLEET MANIFEST NOTES

(CONTINUED)

- UPDATES TO THIS MANIFEST ARE INTENDED TO BE ISSUED ON A QUARTERLY BASIS.

- FOR FURTHER INFORMATION PLEASE CONTACT:

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SUMMARY

BY FISCAL YEAR

YEAR	FY 1989	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	TOTAL
EQUIVALENT SHUTTLE FLIGHTS								
PAYLOADS								
NASA	2.00*	5.57	5.85	8.96	10.64	9.04	9.97	52.03
DOD	2.00*	3.00	3.00	0.00	0.21	1.21	0.28	9.70
ALL OTHER	--	0.43	1.15	2.04	2.15	2.75	2.75	11.27
TOTAL	4.00*	9.00	10.00	11.00	13.00	13.00	13.00	73.00
EXPENDABLE LAUNCH VEHICLE (ELV) FLIGHTS								
VEHICLE CLASS								
SMALL	1*	1	1	1	2	2	1	9
MEDIUM	--	3	2	2	3	2	1	13
INTERMEDIATE	1*	1	1	3	--	--	2	8
LARGE	--	--	--	--	--	--	1	1
TOTAL	2*	5	4	6	5	4	5	31

* TOTAL FLIGHTS, PLANNED AND FLOWN

SUMMARY

BY CALENDAR YEAR

YEAR	CY 1989	CY 1990	CY 1991	CY 1992	CY 1993	CY 1994	CY 1995	TOTAL
EQUIVALENT SHUTTLE FLIGHTS								
PAYLOADS								
NASA	3.57*	6.00	4.85	9.48	10.12	10.04	10.97**	55.03
DOD	2.00	3.00	2.00	0.14	1.07	0.21	0.28	8.70
ALL OTHER	0.43	--	1.15	2.38	2.81	2.75	1.75	11.27
TOTAL	6.00*	9.00	8.00	12.00	14.00	13.00	13.00**	75.00
EXPENDABLE LAUNCH VEHICLE (ELV) FLIGHTS								
VEHICLE CLASS								
SMALL	1*	1	1	1	3	1	2**	10
MEDIUM	1*	2	2	3	3	1	3**	15
INTERMEDIATE	1*	2	1	2	--	--	2	8
LARGE	--	--	--	--	--	--	1	1
TOTAL	3*	5	4	6	6	2	8**	34

* TOTAL FLIGHTS, PLANNED AND FLOWN
** INCLUDES FLIGHTS PROJECTED FOR FOURTH QUARTER

SECTION 2

SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
28	89 7 31 COLUMBIA	XX X	5 X	DOD			C:BREWSTER H. SHAW (COL., USAF) P:R. N. RICHARDS (CDR., USN) MS:DAVID C. LEESTMA (CDR., USN) MS:J. C. ADAMSON (LT. COL., USA) MS:MARK N. BROWN (MAJ., USAF)
34	89 10 12 ATLANTIS	34.3 160	5 5	GALILEO IMAX-02	IUS MD	SSBUV-01 SE-82-15 GHCD PM-01 MLE-03 STEX AMOS-03	C:DONALD E. WILLIAMS (CAPT., USN) P:MICHAEL J. MCCULLEY (CMDR., USN) MS:SHANNON W. LUCID (PH.D.) MS:ELLEN S. BAKER (M.D.) MS:FRANKLIN R. CHANG-DIAZ (PH.D.)
33	89 11 19 DISCOVERY	XX X	5 X	DOD			C:FREDERICK D. GREGORY (COL., USAF P:S. DAVID GRIGGS (RADM., USNR) MS:F. STORY MUSGRAVE (M.D.) MS:KATHRYN C. THORNTON (PH.D.) MS:MANLEY CARTER, JR. (CAPT., USN)
32	89 12 18 COLUMBIA	28.5 190	5 10	SYNCOM IV-05 LDEF-RETR IMAX-03	UNIQUE N/A MD	CNCR-01 PCG-III-02 FEA-02 AFE-02 MLE-04 L3 AMOS-04	C:DANIEL BRANDENSTEIN (CAPT., USN) P:JAMES WETHERBEE (LT. CMDR., USN) MS:BONNIE J. DUNBAR (PH.D.) MS:DAVID LOW (M.S.-AERONAUTICS) MS:MARSHA IVINS (B.S.-AEROSPACE)

NOTE: IN THE MISSION INTEGRATION PROCESS, EFFICIENCY AND INTEGRITY ARE ENHANCED IF FLIGHT NUMBERS ARE MAINTAINED AFTER ASSIGNMENT AT 19 MONTHS BEFORE LAUNCH. WITH MANIFEST CHANGES, NUMERICAL SEQUENCE OF EARLY FLIGHTS IS NOT MAINTAINED.

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
36	90 2 1 ATLANTIS	XX X	5 X	DOD			C:J. O. CREIGHTON (CDR., USN) P:JOHN H. CASPER (COL., USAF) MS:DAVID C. HILMERS (MAJ., USMC) MS:R. M. MULLANE (COL., USAF) MS:P. J. THUOT (LT. CDR., USN)
31	90 3 26 DISCOVERY	28.5 310 X 330	5 5	HST IMAX-04	N/A ICBC+MD		C:LOREN J. SHRIVER (COL., USAF) P:CHARLES F. BOLDEN (COL., USMC) MS:STEVEN A. HAWLEY (PH.D.) MS:B. MCCANDLESS II (CAPT., USN) MS:KATHRYN D. SULLIVAN (PH.D.)
35	90 4 26 COLUMBIA	28.5 190	7 9*	ASTRO-01 BBXRT-01	IG+2 PALL TAPS		C:VANCE D. BRAND (CIVILIAN) P:GUY S. GARDNER (COL., USAF) MS:JOHN LOUNGE (M.S. ASTROPHYSICS) MS:JEFFREY A. HOFFMAN (PH.D.) MS:ROBERT A. R. PARKER (PH.D.) PS:RONALD A. PARISE (PH.D.) PS:SAMUEL T. DURRANCE (PH.D.)
37	90 6 4 ATLANTIS	28.5 243	5 5	GRO	UNIQUE	SSBUV-02	C:S. R. NAGEL (COL., USAF) P:K. D. CAMERON (LT. COL., USMC) MS:JERRY L. ROSS (LT. COL., USAF) MS:JEROME APT (PH.D.) MS:LINDA M. GODWIN (PH.D.)

NOTE: IN THE MISSION INTEGRATION PROCESS, EFFICIENCY AND INTEGRITY ARE ENHANCED IF FLIGHT NUMBERS ARE MAINTAINED AFTER ASSIGNMENT AT 19 MONTHS BEFORE LAUNCH. WITH MANIFEST CHANGES, NUMERICAL SEQUENCE OF EARLY FLIGHTS IS NOT MAINTAINED.

* PLANS TO EXTEND TO 10 DAYS

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
38	90 7 9 DISCOVERY	XX X	5 X	DOD			C:R. O. COVEY (COL., USAF) P:F. L. CULBERTSON (CDR., USN) MS:R. C. SPRINGER (COL., USMC) MS:CARL J. MEADE (MAJ., USAF) MS:C. D. GEMAR (CAPT., USA)
40	90 8 16 COLUMBIA	39.0 160	7 8*	SLS-01	LM	GAS BRIDGE	C:B. D. O'CONNOR (COL., USMC) P:JOHN E. BLAHA (COL., USAF) MS:T. E. JERNIGAN (CIVILIAN) MS:M. RHEA SEDDON (M.D.) MS:JAMES P. BAGIAN (M.D.) PS:F. D. GAFFNEY (M.D.) PS:R. W. PHILLIPS (M.D.)
41	90 10 5 ATLANTIS	28.5 160	5 5	ULYSSES	IUS/PAM		
39	90 11 1 DISCOVERY	57.0 140	7 8	AFP-675 IBSS	PALLET SPAS	STP-01	C:TBD P:TBD MS:TBD MS:TBD MS:G. S. BLUFORD (COL., USAF) MS:R. J. HIEB (CIVILIAN) MS:C. L. VEACH (CIVILIAN)
42	90 12 6 COLUMBIA	28.5 160	7 9**	IML-01 IMAX-05	LM N/A	GAS BRIDGE	

NOTE: IN THE MISSION INTEGRATION PROCESS, EFFICIENCY AND INTEGRITY ARE ENHANCED IF FLIGHT NUMBERS ARE MAINTAINED AFTER ASSIGNMENT AT 19 MONTHS BEFORE LAUNCH. WITH MANIFEST CHANGES, NUMERICAL SEQUENCE OF EARLY FLIGHTS IS NOT MAINTAINED.

* PLANS TO EXTEND TO 9 DAYS
** PLANS TO EXTEND TO 10 DAYS

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
43	91 1 31 ATLANTIS	28.5 160	5 5	TDRS-E	IUS	SSBUV-03 SHARE II CVTE-01	
44	91 3 4 DISCOVERY	XX X	5 X	DOD			
45	91 3 28 COLUMBIA	57.0 160	7 9*	ATLAS-01 IMAX-06	IG+2 PALL MD		
46	91 5 16 ATLANTIS	28.5 160	7 7	TSS-01 EURECA-1L IMAX-07	MPESS+1 P EURECA-A ICBC	EOIM-III/ TEMP2A-03	
47	91 6 17 DISCOVERY	44.0 160	7 7	SL-J	LM	GAS BRIDGE	
48	91 8 22 ATLANTIS	33.4 175	7 7	STARLAB	LM+1 PAL		
49	91 9 30 DISCOVERY	28.5 160	6 7	LAGEOS II GEOSTAR-01	IRIS PAM-D2	FTS-DTF-01 CANEX-02 ASP	
50	91 11 27 ATLANTIS	57.0 291	5 5	UARS	N/A		

* PLANS TO EXTEND TO 10 DAYS

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
51	92 1 16 DISCOVERY	28.5 160	5 7	SPACEHAB-01 EURECA-1R	SPACEHAB EURECA-A	CVTE-02 CXH-01 SSBUV-04	
52	92 2 6 ENDEAVOUR	28.5 160	7 9*	SL-D2	LM + USS		
53	92 3 5 COLUMBIA	28.5 140	7 10**	USML-01	LM+EDO		
54	92 4 6 ATLANTIS	28.5 190	7 7	ASTRO-02 BBXRT-02	IG+2 PALL TAPS		
55	92 5 18 ENDEAVOUR	28.5 160	5 7	PUR-1 USMP-01	 MSL+MPESS		
56	92 6 15 COLUMBIA	57.0 145	7 9	SRL-01	PALL+MPES	DEE SDS-01	
57	92 7 9 ATLANTIS	57.0 160	7 7	ATLAS-02	IG+1 PALL	SPTN-02 SSBUV-05	
58	92 8 6 DISCOVERY	TBD TBD	TBD TBD	FLT OPPTY			
59	92 8 27 ENDEAVOUR	28.5 160	5 7	SPACEHAB-02 SPAS-ORFEUS GEOSTAR-02	SPACEHAB ASTRO-SPA PAM-D2	CXH-02	

* PLANS TO EXTEND TO 10 DAYS
** PLANS TO EXTEND TO 13 DAYS

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
60	92 9 30 COLUMBIA	TBD TBD	7 10*	SLS-02	LM+EDO		
61	92 11 12 DISCOVERY	28.5 160	7 7	INMARSAT-01	PAM-D2	SHOOT SRAD/TPITS SPTN-DOD-01	
62	92 12 10 ENDEAVOUR	28.5 160	5 5	TDRS-F	IUS	CVTE-03 SSBUV-06	
63	93 1 21 COLUMBIA	28.5 140	7 10*	IML-02	LM+EDO		
64	93 2 22 DISCOVERY	28.5 160	5 7	USMP-02 GEOSTAR-03	MSL+MPESS PAM-D2	HPE CXH-03 IFCE/ESA	
65	93 3 15 ATLANTIS	TBD TBD	TBD TBD	FLT OPPTY			
66	93 4 8 ENDEAVOUR	28.5 160	5 7	WAMDII	TAPS	FTS-DTF-02 LITE-01 STP-02	
67	93 5 3 COLUMBIA	28.5 190	7 9	ASTRO-03 BBXRT-03	IG+2 PALL TAPS		

* PLANS TO EXTEND TO 13 DAYS

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
68	93 5 28 DISCOVERY	28.5 TBD	5 5	HST REV-01	PALL+FSS		
69	93 6 24 ATLANTIS	28.5 160	5 7	SPACEHAB-03 EURECA-2L SFU-RETR	SPACEHAB EURECA-A UNIQUE	CMG-03	
70	93 7 15 ENDEAVOUR	57.0 160	7 9	ATLAS-03 SPAS-CRISTA	IG+1 PALL ASTRO-SPA	SSBUV-07	
71	93 8 12 COLUMBIA	57.0 145	7 9	SRL-02	PALL+MPES	SDS-02	
72	93 9 9 DISCOVERY	TBD TBD	TBD TBD	FLT OPPTY			
73	93 9 30 ATLANTIS	28.5 160	5 7	USMP-03 INMARSAT-02 SATCOM	MSL+MPESS PAM-D2 PAM-D2	CXH-04 IEH	
74	93 10 21 ENDEAVOUR	TBD TBD	5 7	OMV-01 WISP SPTN-T	N/A OMV+PALL	SSS	
75	93 11 18 COLUMBIA	28.5 160	7 9	SL-D3	LM + USS		

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
76	93 12 16 DISCOVERY	XX X	5 X	DOD			
77	94 1 13 ATLANTIS	28.5 160	5 5	SPACEHAB-04 EURECA-2R	SPACEHAB EURECA-A	S/C GLOW CMG-04	
78	94 2 7 ENDEAVOUR	28.5 160	7 9	ISF-01	FM+DS	CAPL	
79	94 3 3 COLUMBIA	28.5 140	7 10*	USML-02	LM+EDO		
80	94 3 24 DISCOVERY	28.5 160	5 5	TDRS-G	IUS		
81	94 4 21 ATLANTIS	57.0 160	7 7	ATLAS-04	IG+1 PALL	SPTN-03 SSBUV-08	
82	94 5 12 ENDEAVOUR	28.5 160	5 7	AAFE	2 PALLETS	REFLUX CXE-01 SPTN-DOD-02	
83	94 6 9 COLUMBIA	39.0 160	7 10*	SLS-03	LM+EDO		
84	94 7 10 DISCOVERY	28.5 160	5 7	SPACEHAB-05 XTE	SPACEHAB FSS	CSI-I (MAST-I) STP-03	

* PLANS TO EXTEND TO 16 DAYS

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
85	94 8 6 ATLANTIS	TBD TBD	TBD TBD	FLT OPPTY			
86	94 9 8 ENDEAVOUR	28.5 160	5 7	PUR-2 USMP-04	 MSL+MPESS	CXH-05 FR-01	
87	94 10 13 DISCOVERY	28.5 160	5 5	TDRS-H	IUS	SSBUV-09	
88	94 11 20 ATLANTIS	28.5 160	7 7	ISF-02	AM+DS	SAMPIE/ESA	
89	94 12 13 ENDEAVOUR	57.0 145	7 7	SRL-03	PAL+MPESS	CTM	
90	95 1 12 COLUMBIA	TBD TBD	TBD TBD	FLT OPPTY			
91	95 2 3 DISCOVERY	28.5 160	5 7	SPACEHAB-06	SPACEHAB	CXH-06 SPTN-DOD-03	
92	95 3 2 ATLANTIS	28.5 220	5 7	SSF-01	UNIQUE		
93	95 4 14 COLUMBIA	28.5 140	7 10*	IML-03	LM+EDO		

* PLANS TO EXTEND TO 16 DAYS

**** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
94	95 5 10 DISCOVERY	28.5 160	7 7	ISF-03	FM+DS		
95	95 6 6 ATLANTIS	28.5 220	5 7	SSF-02	UNIQUE		
96	95 6 27 ENDEAVOUR	TBD TBD	TBD TBD	FLT OPPTY			
97	95 8 8 COLUMBIA	28.5 160	5 7	SPACEHAB-07 EURECA-3L	SPACEHAB EURECA-A	CXH-07 SPTN-DOD-04	
98	95 9 7 ATLANTIS	28.5 220	5 7	SSF-03	UNIQUE		
99	95 9 30 ENDEAVOUR	57.0 160	7 9	ATLAS-05	IG+1 PALL	SPTN-04 SSBUV-10	

SECTION 3

ELV PAYLOAD FLIGHT ASSIGNMENTS

**** ELV PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989 MANIFEST

DATE YR MO	CLASS	L A U N C H V E H I C L E TYPE	INCL	PAYLOAD ORBIT	LAUNCH SITE	PAYLOAD
89 09	INTERMEDIATE	ATLAS CENTAUR 68 R	28.5	GSO	ESMC	FLTSATCOM-F8(NAVY)
89 09	SMALL	SCOUT	TBD	TBD	WSMC	MACSAT (NAVY)
89 11	MEDIUM	DELTA 186	99.0	SS	WSMC	COBE
90 01	MEDIUM	ATLAS 50E	98.7	SS	WSMC	NOAA-D
90 02	MEDIUM	DELTA	57.0	LEO	ESMC	ROSAT
90 03	SMALL	SCOUT	TBD	TBD	WSMC	SALT (NAVY)
90 06	INTERMEDIATE	ATLAS CENTAUR	18.0	GTO	ESMC	CRRES
90 10	INTERMEDIATE	ATLAS I	28.5	GSO	ESMC	GOES-I
91 03	SMALL	SCOUT	TBD	TBD	TBD	USAF-1 (DOD)
91 05	MEDIUM	ATLAS 34E	98.7	SS	WSMC	NOAA-I
91 08	MEDIUM	DELTA	28.5	LEO	ESMC	EUVE
91 11	INTERMEDIATE	ATLAS I	28.5	GSO	ESMC	GOES-J
92 05	INTERMEDIATE	ATLAS I	28.5	GSO	ESMC	GOES-K

**** ELV PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989 MANIFEST

DATE YR MO	CLASS	L A U N C H V E H I C L E TYPE	INCL	PAYLOAD ORBIT	LAUNCH SITE	PAYLOAD
92 06	SMALL	SCOUT	TBD	TBD	WSMC	SAMPE
92 07	MEDIUM	TBD	28.7	HE	ESMC	GEOTAIL
92 09	MEDIUM	ATLAS 11E	98.7	SS	WSMC	NOAA-J
92 09	INTERMEDIATE	TITAN III	28.5	EO	ESMC	MARS OBSERVER
92 12	MEDIUM	TBD	28.7	HE	ESMC	WIND
93 01	SMALL	SCOUT	TBD	LEO	SMR	TOMS
93 03	MEDIUM	TBD	28.7	GSO	ESMC	MSAT
93 06	MEDIUM	TBD	90.0	HE	WSMC	POLAR
93 06	SMALL	SCOUT	TBD	LEO	WSMC	SWAS
93 11	MEDIUM	TITAN II	98.7	SS	WSMC	NOAA-K
93 12	SMALL	TBD	TBD	LEO	TBD	FASE
94 06	MEDIUM	TBD	98.6	LEO	WSMC	RADARSAT
94 09	SMALL	TBD	TBD	TBD	TBD	SMEX-04

**** ELV PAYLOAD FLIGHT ASSIGNMENTS ****
JUNE 1989 MANIFEST

DATE YR MO	CLASS	L A U N C H V E H I C L E TYPE	INCL	PAYLOAD ORBIT	LAUNCH SITE	PAYLOAD
95 03	INTERMEDIATE	TBD	28.5	HE	ESMC	SOHO
95 04	MEDIUM	TITAN II	98.7	SS	WSMC	NOAA-L
95 06	SMALL	TBD	TBD	TBD	TBD	SMEX-05
95 07	INTERMEDIATE	ATLAS I	28.5	GSO	ESMC	GOES-L
95 08	LARGE	TITAN IV /CENTAUR**	TBD	PLAN	ESMC	CRAF**

** FOR NASA PLANNING PURPOSES

SECTION 4

PREVIOUS FLIGHTS

**** PREVIOUS SHUTTLE FLIGHTS ****

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
1	81 4 12 COLUMBIA	40.3 172	2 2	DFI	DFI PAL	OEX	C:JOHN W. YOUNG (USN, RET.) P:ROBERT L. CRIPPEN (CAPT., USN)
2	81 11 12 COLUMBIA	38.0 140	2 2	OSTA-1 DFI	PALLET DFI PAL	OEX IECM	C:JOE H. ENGLE (COL., USAF) P:RICHARD H. TRULY (CAPT., USN)
3	82 3 22 COLUMBIA	38.0 130	2 8	OSS-1 DFI	PALLET DFI PAL	IECM OEX SSIP(1) GAS TEST MLR EEVT	C:JACK R. LOUSMA (COL., USMC) P:C. G. FULLERTON (COL., USAF)
4	82 6 27 COLUMBIA	28.5 162	2 7	DOD 82-1 DFI	DFI PAL	OEX IECM MLR CFES NOSL SSIP(2) GAS(1)	C:T. K. MATTINGLY (CAPT., USN) P:H. W. HARTSFIELD (USAF, RET.)
5	82 11 11 COLUMBIA	28.5 160	4 5	SBS-C TELESAT-E	PAM-D PAM-D	GLOW SSIP(3) GAS(1)	C:VANCE D. BRAND (CIVILIAN) P:R. F. OVERMYER (COL., USMC) MS:JOSEPH ALLEN (PH.D.-PHYSICS) MS:W. B. LENOIR (PH.D.-SCIENCE)

**** PREVIOUS SHUTTLE FLIGHTS ****

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
6	83 4 4 CHALLENGER	28.5 150	4 5	TDRS-A	IUS	CFES MLR,NOSL GAS(3)	C:P. J. WEITZ (CAPT., USN, RET.) P:KAROL J. BOBKO (COL., USAF) MS:D. PETERSON (COL., USAF, RET) MS:F. STORY MUSGRAVE (M.D.)
7	83 6 18 CHALLENGER	28.5 160	5 6	SPAS-01 OSTA-2 TELESAT-F PALAPA-B1	 MPESS PAM-D PAM-D	CFES MLR GAS(7)	C:ROBERT L. CRIPPEN (CAPT., USN) P:F. H. HAUCK (CAPT., USN) MS:JOHN M. FABIAN (COL., USAF) MS:SALLY K. RIDE (PH.D.-PHYSICS) MS:NORMAN E. THAGARD (M.D.)
8	83 8 30 CHALLENGER	28.5 160	5 6	PDRS/PFTA OIM INSAT 1-B	 PAM-D	CFES RME GAS(4) SSIP(1)	C:RICHARD H. TRULY (CAPT., USN) P:D. C. BRANDENSTEIN (CDR., USN) MS:D. A. GARDNER (LT. CDR., USN) MS:G. S. BLUFORD (MAJ., USAF) MS:WILLIAM E. THORNTON (M.D.)
9	83 11 28 COLUMBIA	57.0 135	6 10	SPACELAB 1	LM+1P		C:JOHN W. YOUNG (USN, RET.) P:BREWSTER H. SHAW (CAPT., USAF) MS:OWEN K. GARRIOTT (PH.D.) MS:ROBERT A. PARKER (PH.D.) PS:ULF MERBOLD, ESA (PHYSICIST) PS:B. K. LICHTENBERG, MIT (PH.D)

**** PREVIOUS SHUTTLE FLIGHTS ****

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
10 41-B	84 2 3 CHALLENGER	28.5 165	5 8	SPAS-01A PALAPA B-2 WESTAR-6	 PAM-D PAM-D	ACES,IEF C-360b C-360c RME,MLR GAS(5) SSIP(1) IRT	C:VANCE D. BRAND (CIVILIAN) P:R. L. GIBSON (LT. CDR., USN) MS:BRUCE MCCANDLESS (CAPT., USN) MS:R. L. STEWART (LT. COL., USA) MS:RONALD E. MCNAIR (PH.D.)
11 41-C	84 4 6 CHALLENGER	28.5 250	5 7	LDEF-1 SMM REPAIR	 FSS	RME,IMAX C-360b SSIP(1)	C:ROBERT L. CRIPPEN (CAPT., USN) P:FRANCIS R. SCOBEE (USAF, RET) MS:GEORGE D. NELSON (PH.D.) MS:TERRY J. HART (M.S.-ELEC ENG) MS:JAMES D. VAN HOFTEN (PH.D.)
12 41-D	84 8 30 DISCOVERY	28.5 160	6 6	OAST-1 SBS-D TELSTAR 3-C SYNCOM IV-2	MPESS PAM-D PAM-D	CFES III IMAX RME SSIP(1) CLOUDS	C:H. W. HARTSFIELD (USAF, RET.) P:M. L. COATS (CDR., USN) MS:R. A. MULLANE (MAJ., USAF) MS:STEVEN A. HAWLEY (PH.D.) MS:JUDITH A. RESNIK (PH.D.) PS:C. WALKER (MCDONNELL DOUGLAS)
13 41-G	84 10 5 CHALLENGER	57.0 190	7 8	OSTA-3 ERBS LFC/ORS	PALLET MPESS	IMAX RME GAS(8) TLD APE CANEX	C:ROBERT L. CRIPPEN (CAPT., USN) P:JON A. MCBRIDE (CDR., USN) MS:KATHRYN D. SULLIVAN (PH.D.) MS:SALLY K. RIDE (PH.D.-PHYSICS) MS:D. C. LEESTMA (LT. CDR., USN) PS:MARC GARNEAU (NRCC, CANADA) PS:P. SCULLY-POWER (NAVY CIVIL.)

**** PREVIOUS SHUTTLE FLIGHTS ****

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
14 51-A	84 11 8 DISCOVERY	28.5 160	5 8	HS-376 RETV(2) TELESAT-H SYNCOM IV-1	2 PALLET PAM-D	DMOS RME	C:F. H. HAUCK (CAPT., USN) P:DAVID M. WALKER (CDR., USN) MS:ANNA L. FISHER (M.D.) MS:D. A. GARDNER (CDR., USN) MS:JOSEPH P. ALLEN (PH.D.)
15 51-C	85 1 24 DISCOVERY	XX X	5 3	DOD			C:T. K. MATTINGLY (CAPT., USN) P:L. J. SHRIVER (LT. COL., USAF) MS:J. F. BUCHLI (LT. COL., USMC) MS:E. S. ONIZUKA (MAJ., USAF) MS:GARY E. PAYTON (MAJ., USAF)
16 51-D	85 4 12 DISCOVERY	28.5 250	7 7	TELESAT-I SYNCOM IV-3	PAM-D	CFES III AFE PPE/SAS SSIP(2) GAS(2)	C:KAROL J. BOBKO (COL., USAF) P:DONALD E. WILLIAMS (CDR., USN) MS:M. RHEA SEDDON (M.D.) MS:JEFFREY A. HOFFMAN (PH.D.) MS:S. DAVID GRIGGS (CAPT., USNR) PS:C. WALKER (MCDONNELL DOUGLAS) PS:E. JAKE GARN (U.S. SENATE)
17 51-B	85 4 29 CHALLENGER	57.0 190	7 7	SPACELAB 3	LM+MPESS	GAS(2)	C:R. F. OVERMYER (COL., USMC) P:F. D. GREGORY (COL., USAF) MS:DON L. LIND (PH.D.) MS:NORMAN E. THAGARD (M.D.) MS:WILLIAM E. THORNTON (M.D.) PS:L. VAN DEN BERG (EG&G CORP.) PS:T. WANG (JET PROPULSION LAB.)

**** PREVIOUS SHUTTLE FLIGHTS ****

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
18 51-G	85 6 17 DISCOVERY	28.5 190	7 7	SPTN-1 MORELOS-A ARABSAT-1B TELSTAR 3-D	MPESS PAM-D PAM-D PAM-D	FEE FPE ADSF HPTE GAS(6)	C:D. BRANDENSTEIN (CAPT., USN) P:J. O. CREIGHTON (CDR., USN) MS:SHANNON W. LUCID (PH.D.) MS:S. R. NAGEL (LT. COL., USAF) MS:JOHN M. FABIAN (COL., USAF) PS:SULTAN S. AL-SAUD (ARABSAT) PS:PATRICK BAUDRY (FRANCE)
19 51-F	85 7 29 CHALLENGER	50.0 174	7 8	SPACELAB 2	IG+3P	SAREX STTP CBDE	C:C. G. FULLERTON (COL., USAF) P:ROY D. BRIDGES (COL., USAF) MS:F. STORY MUSGRAVE (M.D.) MS:ANTHONY W. ENGLAND (PH.D.) MS:KARL G. HENIZE (PH.D.) PS:LOREN W. ACTON (LOCKHEED) PS:J-D. BARTOE (NAVY CIVILIAN)
20 51-I	85 8 27 DISCOVERY	28.5 190	5 7	AUSSAT-1 ASC-1 SYNCOM IV-4 SYNCOM-SALVAGE	PAM-D PAM-D	PVTOS	C:JOE H. ENGLE (COL., USAF) P:R. O. COVEY (LT. COL., USAF) MS:JAMES VAN HOFTEN (PH.D.) MS:JOHN M. LOUNGE (M.S.) MS:WILLIAM F. FISHER (M.D.)
21 51-J	85 10 3 ATLANTIS	XX X	5 4	DOD			C:KAROL BOBKO (COL., USAF) P:R. J. GRABE (LT. COL., USAF) MS:ROBERT STEWART (COL., USA) MS:DAVID HILMERS (MAJ., USMC) PS:WILLIAM A. PAILES (MAJ., USAF)

**** PREVIOUS SHUTTLE FLIGHTS ****

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
22 61-A	85 10 30 CHALLENGER	57.0 175	8 7	SPACELAB D-1	LM	GLOMR	C:H. W. HARTSFIELD (USAF, RET.) P:STEVEN R. NAGEL (COL., USAF) MS:J. F. BUCHLI (COL., USMC) MS:G. S. BLUFORD (COL., USAF) MS:BONNIE J. DUNBAR (PH.D.) PS:R. FURRER (DFVLR) (GERMANY) PS:E MESSERSCHMID (DFVLR)(GERMANY) PS:W. OCKELS (DFVLR) (DUTCH)
23 61-B	85 11 26 ATLANTIS	28.5 190	7 7	EASE/ACCESS MORELOS-B SATCOM KU-2 AUSSAT-2	MPESS PAM-D PAM-D2 PAM-D	GAS(1) CFES IMAX DMOS MPSE	C:B. H. SHAW (LT. COL., USAF) P:B. D. O'CONNOR (LT. COL., USMC) MS:MARY L. CLEAVE (PH.D.) MS:S. C. SPRING (LT. COL., USA) MS:JERRY L. ROSS (MAJ., USAF) PS:RUDOLFO NERI VELA (MORELOS) PS:C. WALKER (MCDONNELL DOUGLAS)
24 61-C	86 1 12 COLUMBIA	28.5 175	7 6	MSL-2 SATCOM KU-1 GAS BRIDGE	MPESS PAM-D2	HH-G1 IR-IE HPCG IBSE CHAMP SSIP(3) GAS(13)	C:R. L. GIBSON (CDR., USN) P:C. F. BOLDEN (LT. COL., USMC) MS:F. R. CHANG-DIAZ (PH.D.) MS:STEVEN A. HAWLEY (PH.D.) MS:GEORGE D. NELSON (PH.D.) PS:ROBERT CENKER (RCA) PS:BILL NELSON (U.S. CONGRESSMAN)

**** PREVIOUS SHUTTLE FLIGHTS ****

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
25 51-L	86 1 28 CHALLENGER	- -	7 -	SPTN-HALLEY TDRS-B	MPESS IUS	TIS FDE CHAMP RME SSIP(3)	C:FRANCIS R. SCOBEE (USAF, RET) P:MICHAEL J. SMITH (CDR., USN) MS:JUDITH A. RESNIK (PH.D.) MS:E. ONIZUKA (LT. COL., USAF) MS:RONALD E. MCNAIR (PH.D.) PS:GREGORY JARVIS (HUGHES) SFP:CHRISTA MCAULIFFE (TEACHER)
26	88 9 29 DISCOVERY	28.5 160	5 4	TDRS-C	IUS	ADSF-02 PVTOS-02 IRCFE SE-82-04 PCG-II-01 IEF-02 HME-01 ARC-02 MLE-01 ELRAD SE-82-05	C:F. H. HAUCK (CAPT., USN) P:R. O. COVEY (COL., USAF) MS:J. M. LOUNGE (M.S-ASTROPHYSICS) MS:G. D. NELSON (PH.D-ASTRONOMY) MS:D. C. HILMERS (LT. COL., USMC)
27	88 12 2 ATLANTIS	XX X	4 4	DOD			C:R. L. GIBSON (CDR., USN) P:GUY S. GARDNER (LT. COL., USAF) MS:R. M. MULLANE (COL., USAF) MS:JERRY L. ROSS (LT. COL., USAF) MS:W. M. SHEPHERD (CDR., USN)

**** PREVIOUS SHUTTLE FLIGHTS ****

FLT	DATE ORBITER	INCL ALT	CRW DUR	PRIMARY PAYLOADS	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
29	89 3 13 DISCOVERY	28.5 163	5 5	TDRS-D IMAX-01	IUS	SHARE SE-83-09 PCG-III-01 CHROMEX SE-82-08 AMOS-01	C:CAPT. M. L. COATS (CAPT., USN) P:JOHN E. BLAHA (COL., USAF) MS:JAMES F. BUCHLI (COL., USMC) MS:R. C. SPRINGER (COL., USMC) MS:JAMES P. BAGIAN (M.D.)
30	89 5 4 ATLANTIS	28.9 161	5 4	MAGELLAN	IUS	FEA-01 MLE-02 AMOS-02	C:DAVID M. WALKER (CAPT., USN) P:RONALD J. GRABE (COL., USAF) MS:NORMAN E. THAGARD (M.D.) MS:MARY L. CLEAVE (PH.D.) MS:MARK C. LEE (MAJ., USAF)

PREVIOUS SCOUT LAUNCH VEHICLE FLIGHTS

PROGRAM INITIATION DATE: 1959
LAUNCHES TO DATE: 112

FIRST FLIGHT: 1960
LAUNCH VEHICLE SUCCESSES: 98

LAST 20 FLIGHTS

LAUNCH DATE	LAUNCH VEHICLE	SPACECRAFT	FINAL PAYLOAD ORBIT ACHIEVED	NOTES
OCT 12, 1975	S-195	TIP 2	LEO	SUCCESS
DEC 5, 1975	S-196	DAD		FAILURE
MAY 22, 1976	S-179	AIR FORCE	LEO	SUCCESS
SEP 1, 1976	S-197	NAVY	LEO	SUCCESS
OCT 27, 1977	S-200	NAVY	LEO	SUCCESS
APR 26, 1978	S-201	HCMM	LEO	SUCCESS
FEB 18, 1979	S-202	SAGE	LEO	SUCCESS
JUN 2, 1979	S-198	UK-6	LEO	SUCCESS
OCT 30, 1979	S-203	MAGSAT	LEO	SUCCESS
MAY 14, 1981	S-192	NOVA I	LEO	SUCCESS
JUN 27, 1983	S-205	HILAT	LEO	SUCCESS
OCT 11, 1984	S-208	NOVA-III	LEO	SUCCESS
AUG 2, 1985	S-209	SOOS-I	LEO	SUCCESS
DEC 12, 1985	S-207	AFITV	LEO	SUCCESS
NOV 13, 1986	S-199	AF POLAR BEAR	LEO	SUCCESS
SEP 16, 1987	S-209	SOOS-2	LEO	SUCCESS
MAR 25, 1988	S-206	SAN MARCO-DL	LEO	SUCCESS
APR 25, 1988	S-211	SOOS-III	LEO	SUCCESS
JUN 15, 1988	S-213	NOVA-II	LEO	SUCCESS
AUG 25, 1988	S-214	SOOS-IV	LEO	SUCCESS

PREVIOUS DELTA LAUNCH VEHICLE FLIGHTS

PROGRAM INITIATION DATE: 1959
LAUNCHES TO DATE: 182

FIRST FLIGHT: 1960
LAUNCH VEHICLE SUCCESSES: 170

LAST 20 FLIGHTS

LAUNCH DATE	LAUNCH VEHICLE	SPACECRAFT	FINAL PAYLOAD ORBIT ACHIEVED	NOTES
JUL 16, 1982	163	LANDSAT-D	SS	SUCCESS
AUG 26, 1982	164	TELESAT-F	GSO	SUCCESS
OCT 28, 1982	165	RCA-E	GSO	SUCCESS
JAN 26, 1983	166	IRAS	SS	SUCCESS
APR 11, 1983	167	RCA-F	GSO	SUCCESS
APR 28, 1983	168	GOES-F	GSO	SUCCESS
MAY 26, 1983	169	EXOSAT	HE	SUCCESS
JUN 28, 1983	170	GALAXY-A	GSO	SUCCESS
JUL 28, 1983	171	TELSTAR-3A	GSO	SUCCESS
SEP 8, 1983	172	RCA-6	GSO	SUCCESS
SEP 22, 1983	173	GALAXY-B	GSO	SUCCESS
MAR 1, 1984	174	LANDSAT-D PRIME	SS	SUCCESS
AUG 16, 1984	175	AMPTE	HE	SUCCESS
SEP 21, 1984	176	GALAXY-C	GSO	SUCCESS
NOV 14, 1984	177	NATO-3D	GSO	SUCCESS
MAY 3, 1986	178	GOES-G		FAILURE
SEP 5, 1986	180	DOD-1	LEO	SUCCESS
FEB 26, 1987	179	GOES-H	GSO	SUCCESS
MAR 20, 1987	182	PALAPA B2P	GSO	SUCCESS
FEB 8, 1988	181	DOD-2	LEO	SUCCESS

PREVIOUS ATLAS CENTAUR VEHICLE FLIGHTS

PROGRAM INITIATION DATE: 1958
LAUNCHES TO DATE: 66

FIRST FLIGHT: MAY 8, 1962
LAUNCH VEHICLE SUCCESSES: 56

LAST 20 FLIGHTS

LAUNCH DATE	LAUNCH VEHICLE	SPACECRAFT	FINAL PAYLOAD ORBIT ACHIEVED	NOTES
AUG 8,1978	AC-51	PIONEER VENUS-2	HELIO	SUCCESS
NOV 13,1978	AC-52	HEAO B	LEO	SUCCESS
MAY 4, 1979	AC-47	FLTSATCOM-2	GSO	SUCCESS
SEP 20, 1979	AC-53	HEAO 3	LEO	SUCCESS
JAN 17, 1980	AC-49	FLTSATCOM-3	GSO	SUCCESS
OCT 30, 1980	AC-57	FLTSATCOM-4	GSO	SUCCESS
DEC 6, 1980	AC-54	INTELSAT V	GSO	SUCCESS
FEB 21, 1981	AC-42	COMSTAR D-4	GSO	SUCCESS
MAY 23, 1981	AC-56	INTELSAT V	GSO	SUCCESS
AUG 6, 1981	AC-59	FLTSATCOM-5	GSO	FAILURE
DEC 15, 1981	AC-55	INTELSAT V	GSO	SUCCESS
MAR 4, 1982	AC-58	INTELSAT V	GSO	SUCCESS
SEP 28, 1982	AC-60	INTELSAT V	GSO	SUCCESS
MAY 19, 1983	AC-61	INTELSAT V	GSO	SUCCESS
JUN 9, 1984	AC-62	INTELSAT V		FAILURE
MAR 22, 1985	AC-63	INTELSAT VA	GSO	SUCCESS
JUN 29, 1985	AC-64	INTELSAT VA	GSO	SUCCESS
SEP 28, 1985	AC-65	INTELSAT VA	GSO	SUCCESS
DEC 4, 1986	AC-66	FLTSATCOM-7	GSO	SUCCESS
MAR 26, 1987	AC-67	FLTSATCOM-6		FAILURE

SECTION 5

PAYLOAD REQUESTS

NOTES:

1. INCLUDES PRIMARY, COMPLEX SECONDARY, AND OTHER MANIFESTED SECONDARY PAYLOADS.

2. REQUEST DATE: LAUNCH DATE REQUESTED BY THE PAYLOAD ORGANIZATION

3. FLIGHT DATE : LAUNCH DATE SHOWN IN THE MANIFEST.
   IF NOT MANIFESTED, NO DATE IS GIVEN.

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
AAFE	2 PALLETS	94 08	94 05 12	SHUTTLE	PRIMARY
AFE-02	MIDDECK LOCKER	88 04	89 12 18	SHUTTLE	SECONDARY*
AFP-675	PALLET	89 03	90 11 1	SHUTTLE	PRIMARY
ALFE (STP-01)	HH-G	89 07	90 11 1	SHUTTLE	SECONDARY
AMOS-03	MIDDECK LOCKER	89 07	89 10 12	SHUTTLE	SECONDARY*
AMOS-04	MIDDECK LOCKER	89 08	89 12 18	SHUTTLE	SECONDARY*
ASP	HH-G	88 11	91 09 30	SHUTTLE	SECONDARY
ASTRO-01	IG+2 PALLETS	89 11	90 04 26	SHUTTLE	PRIMARY
ASTRO-02	IG+2 PALLETS	91 01	92 04 6	SHUTTLE	PRIMARY
ASTRO-03**	IG+2 PALLETS	93 04	93 05 3	SHUTTLE	PRIMARY
ATLAS-01	IG+2 PALLETS	90 09	91 03 28	SHUTTLE	PRIMARY
ATLAS-02	IG+1 PALLET	91 09	92 07 9	SHUTTLE	PRIMARY
ATLAS-03	IG+1 PALLET	92 11	93 07 15	SHUTTLE	PRIMARY
ATLAS-04	IG+1 PALLET	93 11	94 04 21	SHUTTLE	PRIMARY
ATLAS-05**	IG+1 PALLET	94 11	95 09 30	SHUTTLE	PRIMARY

* Not a complex secondary payload
** For NASA planning purposes

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
AXAF	UNIQUE	95 12		SHUTTLE	PRIMARY
BBXRT-01	TAPS	89 11	90 04 26	SHUTTLE	PRIMARY
BBXRT-02	TAPS	92 04	92 04 6	SHUTTLE	PRIMARY
BBXRT-03**	TAPS	93 05	93 05 3	SHUTTLE	PRIMARY
BIOPLATFORM-01**	N/A	98 01		MEDIUM**	N/A
CANEX-02	UNIQUE	85 12	91 09 30	SHUTTLE	SECONDARY
CAPL	HH-G	91 01	94 02 7	SHUTTLE	SECONDARY
CASSINI**	CENTAUR**	96 04		TITAN IV**	N/A
CMG-01	MIDDECK	91 07		SHUTTLE	SECONDARY
CMG-02	MIDDECK	92 07		SHUTTLE	SECONDARY
CMG-03	MIDDECK	93 01	93 06 24	SHUTTLE	SECONDARY
CMG-04	MIDDECK	93 07	94 01 13	SHUTTLE	SECONDARY
CMG-05	MIDDECK	94 01		SHUTTLE	SECONDARY
CMG-06	MIDDECK	94 07		SHUTTLE	SECONDARY
CMG-07	MIDDECK	95 01		SHUTTLE	SECONDARY

** For NASA planning purposes

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
CMG-08	MIDDECK	95 07		SHUTTLE	SECONDARY
CNCR-01	MIDDECK LOCKER	89 02	89 12 18	SHUTTLE	SECONDARY*
COBE	N/A	89 06	89 11	DELTA	N/A
COLD-SAT**	N/A	96 12		MEDIUM**	N/A
CRAF**	CENTAUR**	95 08	95 08	TITAN IV**	N/A
CRRES	N/A	90 06	90 06	ATLAS-CENTAUR	N/A
CSI-I (MAST-I)	MDM PALLET	94 11	94 07 10	SHUTTLE	SECONDARY
CSI-II**	MDM PALLET	95 12		SHUTTLE	SECONDARY
CTM	HH-G	89 06	94 12 13	SHUTTLE	SECONDARY
CVTE-01	MIDDECK	89 11	91 01 31	SHUTTLE	SECONDARY
CVTE-02	MIDDECK	91 06	92 01 16	SHUTTLE	SECONDARY
CVTE-03	MIDDECK	92 04	92 12 10	SHUTTLE	SECONDARY
CXE-01	UNIQUE	90 10	94 05 12	SHUTTLE	SECONDARY
CXH-01	HH-M	92 01	92 01 16	SHUTTLE	SECONDARY
CXH-02	HH-M	91 10	92 08 27	SHUTTLE	SECONDARY

* Not a complex secondary payload
** For NASA planning purposes

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
CXH-03	HH-M	92 01	93 02 22	SHUTTLE	SECONDARY
CXH-04	HH-M	92 04	93 09 30	SHUTTLE	SECONDARY
CXH-05	HH-M	92 07	94 09 8	SHUTTLE	SECONDARY
CXH-06	HH-M	92 10	95 02 3	SHUTTLE	SECONDARY
CXH-07	HH-M	92 07	95 08 8	SHUTTLE	SECONDARY
CXH-08	HH-M	92 04		SHUTTLE	SECONDARY
CXH-09	HH-M	91 04		SHUTTLE	SECONDARY
CXH-10	HH-M	92 10		SHUTTLE	SECONDARY
CXH-11	HH-M	93 01		SHUTTLE	SECONDARY
CXH-12	HH-M	93 04		SHUTTLE	SECONDARY
CXH-13	HH-M	93 07		SHUTTLE	SECONDARY
CXH-14	HH-M	93 10		SHUTTLE	SECONDARY
CXH-15	HH-M	94 01		SHUTTLE	SECONDARY
CXH-16	HH-M	94 04		SHUTTLE	SECONDARY
CXH-17	HH-M	94 07		SHUTTLE	SECONDARY

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
CXH-18	HH-M	94 10		SHUTTLE	SECONDARY
CXH-19	HH-M	95 01		SHUTTLE	SECONDARY
CXH-20	HH-M	95 04		SHUTTLE	SECONDARY
DEE	GAS BEAM	91 01	92 06 15	SHUTTLE	SECONDARY
DOD-02	UNIQUE	89 07	89 07 31	SHUTTLE	PRIMARY
DOD-03	UNIQUE	89 11	89 11 19	SHUTTLE	PRIMARY
DOD-04	UNIQUE	90 02	90 02 1	SHUTTLE	PRIMARY
DOD-05	UNIQUE	90 07	90 07 9	SHUTTLE	PRIMARY
DOD-06	UNIQUE	91 03	91 03 4	SHUTTLE	PRIMARY
DOD-07	UNIQUE	93 12	93 12 16	SHUTTLE	PRIMARY
DXS	UNIQUE	92 08		SHUTTLE	SECONDARY
ECT	HH-M	91 10		SHUTTLE	SECONDARY
EOIM-III-02	MPESS	91 01		SHUTTLE	SECONDARY
EOIM-III-03	MPESS	92 06		SHUTTLE	SECONDARY
EOIM-III-04	MPESS	94 01		SHUTTLE	SECONDARY

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
EOIM-III/TEMP2A-03	MPESS	90 06		SHUTTLE	SECONDARY
EURECA-1L	EURECA-A	90 09	91 05 16	SHUTTLE	PRIMARY
EURECA-1R	EURECA-A	91 03	92 01 16	SHUTTLE	PRIMARY
EURECA-2L	EURECA-A	93 01	93 06 24	SHUTTLE	PRIMARY
EURECA-2R	EURECA-A	93 06	94 01 13	SHUTTLE	PRIMARY
EURECA-3L	EURECA-A	95 06	95 08 8	SHUTTLE	PRIMARY
EURECA-3R	EURECA-A	95 12		SHUTTLE	PRIMARY
EUVE	N/A	91 08	91 08	DELTA	N/A
EXPLORER A**	TBD	96 04		MEDIUM**	N/A
FASE	N/A	93 12	93 12	SMALL	N/A
FEA-02	MIDDECK LOCKER	89 07	89 12 18	SHUTTLE	SECONDARY*
FLTSATCOM-F8(NAVY)	N/A	89 09	89 09	ATLAS-CENTAUR	N/A
FR-01**	HH-G	92 06	94 09 8	SHUTTLE	SECONDARY
FR-02**	HH-G	92 06		SHUTTLE	SECONDARY
FR-03**	HH-G	92 06		SHUTTLE	SECONDARY

* Not a complex secondary payload
** For NASA planning purposes

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
FTS-DTF-01	UNIQUE	91 09	91 09 30	SHUTTLE	SECONDARY
FTS-DTF-02	UNIQUE	93 01	93 04 8	SHUTTLE	SECONDARY
GALILEO	IUS	89 10	89 10 12	SHUTTLE	PRIMARY
GAS BRIDGE	GAS BRIDGE	90 06	91 06 17	SHUTTLE	SECONDARY
GEOSTAR-01	PAM-D2	91 08	91 09 30	SHUTTLE	PRIMARY
GEOSTAR-02	PAM-D2	92 02	92 08 27	SHUTTLE	PRIMARY
GEOSTAR-03	PAM-D2	92 08	93 02 22	SHUTTLE	PRIMARY
GEOTAIL	TBD	92 07	92 07	MEDIUM	N/A
GHCD	MIDDECK LOCKER	89 02	89 10 12	SHUTTLE	SECONDARY*
GOES-I	N/A	90 07	90 10	ATLAS I	N/A
GOES-J	N/A	91 11	91 11	ATLAS I	N/A
GOES-K	N/A	92 05	92 05	ATLAS I	N/A
GOES-L	N/A	95 07	95 07	ATLAS I	N/A
GOES-M	N/A	95 12	95 12	ATLAS I	N/A
GRO	UNIQUE	90 01	90 06 4	SHUTTLE	PRIMARY

* Not a complex secondary payload

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
HC-10	UNIQUE	88 10		SHUTTLE	PRIMARY
HC-11	UNIQUE	88 05		SHUTTLE	PRIMARY
HC-12	UNIQUE	89 02		SHUTTLE	PRIMARY
HC-13	UNIQUE	89 06		SHUTTLE	PRIMARY
HC-14	UNIQUE	89 11		SHUTTLE	PRIMARY
HC-15	UNIQUE	90 06		SHUTTLE	PRIMARY
HC-16	UNIQUE	90 11		SHUTTLE	PRIMARY
HC-17	UNIQUE	91 06		SHUTTLE	PRIMARY
HC-18	UNIQUE	91 11		SHUTTLE	PRIMARY
HPE	HH-G	89 02	93 02 22	SHUTTLE	SECONDARY
HST	N/A	89 06	90 03 26	SHUTTLE	PRIMARY
HST REV-01	PALL+FSS	93 06	93 05 28	SHUTTLE	PRIMARY
HST REV-02	PALL+FSS	97 01		SHUTTLE	PRIMARY
IBSS	SPAS	89 06	90 11 1	SHUTTLE	PRIMARY
IEH	HH-G	92 06	93 09 30	SHUTTLE	SECONDARY

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
IFCE/ESA	HH-G	91 06	93 02 22	SHUTTLE	SECONDARY
IMAX-02	MIDDECK LOCKER	89 10	89 10 12	SHUTTLE	***
IMAX-03	MIDDECK LOCKER	89 12	89 12 18	SHUTTLE	***
IMAX-04	ICBC+MD	90 03	90 03 26	SHUTTLE	***
IMAX-05	N/A	90 12	90 12 6	SHUTTLE	***
IMAX-06	MIDDECK LOCKER	91 03	91 03 28	SHUTTLE	***
IMAX-07	ICBC	91 05	91 05 16	SHUTTLE	***
IMAX-HST-R	ICBC	93 06		SHUTTLE	***
IMAX-MAST-I	ICBC	94 11		SHUTTLE	***
IMAX-SRL-01	MIDDECK LOCKER	91 07		SHUTTLE	***
IMAX-UARS	MIDDECK LOCKER	90 10		SHUTTLE	***
IML-01	LM	91 04	90 12 6	SHUTTLE	PRIMARY
IML-02	LM+EDO	93 01	93 01 21	SHUTTLE	PRIMARY
IML-03	LM+EDO	95 04	95 04 14	SHUTTLE	PRIMARY
IML-04**	LM+EDO	97 04		SHUTTLE	PRIMARY

** For NASA planning purposes
*** IMAX is manifested with the appropriate primary payloads

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
INMARSAT-01	PAM-D2	88 06	92 11 12	SHUTTLE	PRIMARY
INMARSAT-02	PAM-D2	94 04	93 09 30	SHUTTLE	PRIMARY
INTELSAT VI-01	UNIQUE	89 10		SHUTTLE	PRIMARY
INTELSAT VI-02	UNIQUE	90 04		SHUTTLE	PRIMARY
INTELSAT VI-05	UNIQUE	91 01		SHUTTLE	PRIMARY
ISF-01	FM+DS	94 02	94 02 7	SHUTTLE	PRIMARY
ISF-02	AM+DS	94 08	94 11 20	SHUTTLE	PRIMARY
ISF-03	FM+DS	95 02	95 05 10	SHUTTLE	PRIMARY
ISF-04**	AM+DS	95 08		SHUTTLE	PRIMARY
ISF-05**	AM+DS	96 02		SHUTTLE	PRIMARY
ISF-06**	AM+DS	96 08		SHUTTLE	PRIMARY
ISF-07**	AM+DS	97 02		SHUTTLE	PRIMARY
ISF-08**	AM+DS	97 08		SHUTTLE	PRIMARY
ISF-09**	AM+DS	98 02		SHUTTLE	PRIMARY
ISF-10**	AM+DS	98 08		SHUTTLE	PRIMARY

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**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
ISF-11**	AM+DS	99 02		SHUTTLE	PRIMARY
ISF-12**	AM+DS	99 08		SHUTTLE	PRIMARY
ISF-13**	AM+DS	00 02		SHUTTLE	PRIMARY
ISF-14**	AM+DS	00 08		SHUTTLE	PRIMARY
IUTE-05	HH-M	95 06		SHUTTLE	SECONDARY
L3	MIDDECK LOCKER	89 02	89 12 18	SHUTTLE	SECONDARY*
LAGEOS II	IRIS	90 06	91 09 30	SHUTTLE	PRIMARY
LDEF-RETR	N/A	89 07	89 12 18	SHUTTLE	PRIMARY
LIFESAT-01**	TBD	94 01		MEDIUM**	N/A
LIFESAT-02**	TBD	94 06		MEDIUM**	N/A
LIFESAT-03**	TBD	95 01		MEDIUM**	N/A
LIFESAT-04**	TBD	95 06		MEDIUM**	N/A
LIFESAT-05**	TBD	96 03		MEDIUM**	N/A
LIFESAT-06**	TBD	96 09		MEDIUM**	N/A
LITE-01	PALLET	92 10	93 04 8	SHUTTLE	SECONDARY

* Not a complex secondary payload
** For NASA planning purposes

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
LUNAR OBSERVER**	TBD	96 10		INTERMEDIATE**	N/A
MACSAT (NAVY)	N/A	89 09	89 09	SCOUT	N/A
MARS OBSERVER	TOS	92 09	92 09	TITAN III	N/A
MARS OBSERVER II**	TBD	97 06		INTERMEDIATE**	N/A
MLE-03	MIDDECK LOCKER	89 02	89 10 12	SHUTTLE	SECONDARY*
MLE-04	MIDDECK LOCKER	89 03	89 12 18	SHUTTLE	SECONDARY*
MSAT**	TBD	93 03	93 03	MEDIUM**	N/A
NOAA-D	N/A	90 01	90 01	ATLAS E	N/A
NOAA-I	N/A	91 05	91 05	ATLAS E	N/A
NOAA-J	N/A	92 09	92 09	ATLAS E	N/A
NOAA-K	N/A	93 12	93 11	TITAN II	N/A
NOAA-L	N/A	95 04	95 04	TITAN II	N/A
NOAA-M	N/A	96 07		TITAN II	N/A
NTE-02**	TBD	96 06		SHUTTLE	SECONDARY
NTE-03**	TBD	97 01		SHUTTLE	SECONDARY

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** For NASA planning purposes

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
OMV-01	N/A	93 12	93 10 21	SHUTTLE	PRIMARY
OSL**	TBD	95 08		MEDIUM**	N/A
PCG-III-02	MIDDECK LOCKER	89 04	89 12 18	SHUTTLE	SECONDARY*
PM-01	MIDDECK LOCKER	89 02	89 10 12	SHUTTLE	SECONDARY*
POLAR	TBD	93 06	93 06	MEDIUM	N/A
POP-I**	TBD	96 10		TITAN IV**	N/A
POP-II**	TBD	98 10		TITAN IV**	N/A
RADARSAT**	TBD	94 06	94 06	MEDIUM**	N/A
RCA 3001	PAM-D	90 06		SHUTTLE	PRIMARY
RCA 4004	PAM-D2	89 09		SHUTTLE	PRIMARY
RCA 4006	PAM-D2	91 06		SHUTTLE	PRIMARY
REFLUX	HH-G	92 12	94 05 12	SHUTTLE	SECONDARY
ROSAT	N/A	90 02	90 02	DELTA	N/A
S/C GLOW	HH-M	92 06	94 01 13	SHUTTLE	SECONDARY
SALT (NAVY)	N/A	90 03	90 03	SCOUT	N/A

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** For NASA planning purposes

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
SAMPE	N/A	92 06	92 06	SCOUT	N/A
SAMPIE/ESA	HH-M	92 06	94 11 20	SHUTTLE	SECONDARY
SATCOM	PAM-D2	91 07	93 09 30	SHUTTLE	PRIMARY
SDS-01	HH-G	92 01	92 06 15	SHUTTLE	SECONDARY
SDS-02	HH-G	93 01	93 08 12	SHUTTLE	SECONDARY
SE-82-15	MIDDECK LOCKER	82 06	89 10 12	SHUTTLE	SECONDARY*
SFU-RETR	UNIQUE	93 06	93 06 24	SHUTTLE	PRIMARY
SHARE II	UNIQUE	91 01	91 01 31	SHUTTLE	SECONDARY
SHEAL II	UNIQUE/TAPS	91 05		SHUTTLE	PRIMARY
SHOOT	HH-M	92 03	92 11 12	SHUTTLE	SECONDARY
SIRTF**	CENTAUR**	98 06		TITAN IV**	N/A
SKIRT (STP-01)	HH-G	89 07	90 11 1	SHUTTLE	SECONDARY
SL-D2	LM + USS	90 10	92 02 6	SHUTTLE	PRIMARY
SL-D3	LM + USS	92 10	93 11 18	SHUTTLE	PRIMARY
SL-J	LM	90 10	91 06 17	SHUTTLE	PRIMARY

* Not a complex secondary payload
** For NASA planning purposes

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
SLS-01	LM	90 03	90 08 16	SHUTTLE	PRIMARY
SLS-02	LM+EDO	92 03	92 09 30	SHUTTLE	PRIMARY
SLS-03	LM+EDO	94 06	94 06 9	SHUTTLE	PRIMARY
SLS-04	LM+EDO	96 06		SHUTTLE	PRIMARY
SLS-05**	LM+EDO	98 06		SHUTTLE	PRIMARY
SMEX-04	N/A	94 09	94 09	SMALL	N/A
SMEX-05	N/A	95 06	95 06	SMALL	N/A
SMEX-06	N/A	95 12	95 12	SMALL	N/A
SMEX-07	N/A	96 06		SMALL	N/A
SMEX-08	N/A	96 12		SMALL	N/A
SMEX-09	N/A	97 06		SMALL	N/A
SMEX-10	N/A	97 12		SMALL	N/A
SOHO	N/A	95 03	95 03	INTERMEDIATE	N/A
SOLAR PROBE**	CENTAUR**	98 05		TITAN IV**	N/A
SPACEHAB-01	SPACEHAB	91 06	92 01 16	SHUTTLE	PRIMARY

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**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
SPACEHAB-02	SPACEHAB	92 10	92 08 27	SHUTTLE	PRIMARY
SPACEHAB-03	SPACEHAB	93 07	93 06 24	SHUTTLE	PRIMARY
SPACEHAB-04	SPACEHAB	93 12	94 01 13	SHUTTLE	PRIMARY
SPACEHAB-05	SPACEHAB	94 06	94 07 10	SHUTTLE	PRIMARY
SPACEHAB-06	SPACEHAB	94 12	95 02 3	SHUTTLE	PRIMARY
SPACEHAB-07	SPACEHAB	96 04	95 08 8	SHUTTLE	PRIMARY
SPACEHAB-08**	SPACEHAB	96 10		SHUTTLE	PRIMARY
SPACEHAB-09**	SPACEHAB	95 07		SHUTTLE	PRIMARY
SPAS-CRISTA	ASTRO-SPAS	93 05	93 07 15	SHUTTLE	PRIMARY
SPAS-ORFEUS	ASTRO-SPAS	91 05	92 08 27	SHUTTLE	PRIMARY
SPTN-02	MPESS	89 01	92 07 9	SHUTTLE	SECONDARY
SPTN-03**	MPESS	94 04	94 04 21	SHUTTLE	SECONDARY
SPTN-04**	MPESS	95 04	95 09 30	SHUTTLE	SECONDARY
SPTN-DOD-01	DOD MPESS	91 05	92 11 12	SHUTTLE	SECONDARY
SPTN-DOD-02	DOD MPESS	92 05	94 05 12	SHUTTLE	SECONDARY

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**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
SPTN-DOD-03	DOD MPESS	93 05	95 02 3	SHUTTLE	SECONDARY
SPTN-DOD-04	DOD MPESS	94 05	95 08 8	SHUTTLE	SECONDARY
SPTN-DOD-05	DOD MPESS	95 05		SHUTTLE	SECONDARY
SPTN-DOD-06	DOD MPESS	96 05		SHUTTLE	SECONDARY
SPTN-DOD-07	DOD MPESS	97 05		SHUTTLE	SECONDARY
SPTN-T	MPESS	93 12	93 10 21	SHUTTLE	SECONDARY
SRAD/TPITS	PALLET	92 01	92 11 12	SHUTTLE	SECONDARY
SRL-01	PALL+MPESS	92 03	92 06 15	SHUTTLE	PRIMARY
SRL-02	PALL+MPESS	93 08	93 08 12	SHUTTLE	PRIMARY
SRL-03	PAL+MPESS	94 12	94 12 13	SHUTTLE	PRIMARY
SSBUV-01	UNIQUE	88 01	89 10 12	SHUTTLE	SECONDARY
SSBUV-02	UNIQUE	89 01	90 06 4	SHUTTLE	SECONDARY
SSBUV-03	UNIQUE	89 07	91 01 31	SHUTTLE	SECONDARY
SSBUV-04	UNIQUE	90 01	92 01 16	SHUTTLE	SECONDARY
SSBUV-05	UNIQUE	90 07	92 07 9	SHUTTLE	SECONDARY

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
SSBUV-06	UNIQUE	91 01	92 12 10	SHUTTLE	SECONDARY
SSBUV-07	UNIQUE	91 07	93 07 15	SHUTTLE	SECONDARY
SSBUV-08	UNIQUE	92 01	94 04 21	SHUTTLE	SECONDARY
SSBUV-09	UNIQUE	92 07	94 10 13	SHUTTLE	SECONDARY
SSBUV-10	UNIQUE	93 01	95 09 30	SHUTTLE	SECONDARY
SSBUV-11	UNIQUE	93 07		SHUTTLE	SECONDARY
SSBUV-12	UNIQUE	94 01		SHUTTLE	SECONDARY
SSF-01	UNIQUE	95 03	95 03 2	SHUTTLE	PRIMARY
SSF-02	UNIQUE	95 06	95 06 6	SHUTTLE	PRIMARY
SSF-03	UNIQUE	95 09	95 09 7	SHUTTLE	PRIMARY
SSF-04	UNIQUE	95 10		SHUTTLE	PRIMARY
SSF-05	UNIQUE	95 12		SHUTTLE	PRIMARY
SSF-06	UNIQUE	96 02		SHUTTLE	PRIMARY
SSF-07	UNIQUE	96 03		SHUTTLE	PRIMARY
SSF-08	UNIQUE	96 05		SHUTTLE	PRIMARY

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
SSF-09	UNIQUE	96 06		SHUTTLE	PRIMARY
SSF-10	UNIQUE	96 08		SHUTTLE	PRIMARY
SSF-11	UNIQUE	96 09		SHUTTLE	PRIMARY
SSF-12	UNIQUE	96 11		SHUTTLE	PRIMARY
SSF-13	UNIQUE	96 12		SHUTTLE	PRIMARY
SSF-14	UNIQUE	97 02		SHUTTLE	PRIMARY
SSF-15	UNIQUE	97 03		SHUTTLE	PRIMARY
SSF-16	UNIQUE	97 05		SHUTTLE	PRIMARY
SSF-17	UNIQUE	97 06		SHUTTLE	PRIMARY
SSF-18	UNIQUE	97 08		SHUTTLE	PRIMARY
SSF-19	UNIQUE	97 09		SHUTTLE	PRIMARY
SSF-20	UNIQUE	97 11		SHUTTLE	PRIMARY
SSS	UNIQUE	93 10	93 10 21	SHUTTLE	SECONDARY
STARLAB	LM+1 PAL	90 06	91 08 22	SHUTTLE	PRIMARY
STEX	MIDDECK LOCKER	89 04	89 10 12	SHUTTLE	SECONDARY*

* Not a complex secondary payload

**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
STP-01	HH-M	90 07	90 11 1	SHUTTLE	SECONDARY
STP-02	MPESS	92 08	93 04 8	SHUTTLE	SECONDARY
STP-03	MPESS	94 08	94 07 10	SHUTTLE	SECONDARY
SWAS	N/A	93 06	93 06	SCOUT	N/A
SYNCOM IV-05	UNIQUE	89 07	89 12 18	SHUTTLE	PRIMARY
TDRS-E	IUS	90 03	91 01 31	SHUTTLE	PRIMARY
TDRS-F	IUS	91 08	92 12 10	SHUTTLE	PRIMARY
TDRS-G	IUS	91 12	94 03 24	SHUTTLE	PRIMARY
TDRS-H**	IUS	92 11	94 10 13	SHUTTLE	PRIMARY
TFS-01	HH-G	93 01		SHUTTLE	SECONDARY
TFS-02	HH-G	94 01		SHUTTLE	SECONDARY
TOMS	N/A	93 01	93 01	SCOUT	N/A
TSS-01	MPESS+1 PAL	90 10	91 05 16	SHUTTLE	PRIMARY
TSS-02**	MPESS+1 PAL	92 10		SHUTTLE	PRIMARY
TSS-03**	MPESS+1 PAL	94 10		SHUTTLE	PRIMARY

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**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
UARS	N/A	90 10	91 11 27	SHUTTLE	PRIMARY
UFO-02	UNIQUE	93 10		SHUTTLE	PRIMARY
UFO-03	UNIQUE	94 04		SHUTTLE	PRIMARY
ULYSSES	IUS/PAM	90 10	90 10 5	SHUTTLE	PRIMARY
USAF-01	N/A	91 03		SCOUT	N/A
USML-01	LM+EDO	92 03	92 03 5	SHUTTLE	PRIMARY
USML-02	LM+EDO	94 03	94 03 3	SHUTTLE	PRIMARY
USML-03	LM+EDO	96 03		SHUTTLE	PRIMARY
USML-04	LM+EDO	98 03		SHUTTLE	PRIMARY
USMP-01	MSL+MPESS	92 05	92 05 18	SHUTTLE	PRIMARY
USMP-02	MSL+MPESS	93 06	93 02 22	SHUTTLE	PRIMARY
USMP-03	MSL+MPESS	94 06	93 09 30	SHUTTLE	PRIMARY
USMP-04	MSL+MPESS	95 06	94 09 8	SHUTTLE	PRIMARY
USMP-05**	MSL+MPESS	96 06		SHUTTLE	PRIMARY
UVLIM (STP-01)	HH-G	88 07	90 11 1	SHUTTLE	SECONDARY

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**** PAYLOAD REQUESTS ****

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS	PRIMARY/SECONDARY
WAMDII	TAPS	93 04	93 04 8	SHUTTLE	PRIMARY
WIND	TBD	92 12	92 12	MEDIUM	N/A
WISP	OMV+PALL	93 12	93 10 21	SHUTTLE	PRIMARY
XTE	FSS	93 11	94 07 10	SHUTTLE	PRIMARY

SECTION 6

PAYLOAD/ACRONYM LIST

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
AAFE	Aeroassist Flight Experiment	Experimental vehicle that simulates the atmospheric flight phase of an Aeroassisted Orbital Transfer Vehicle (AOTV) returning from geosynchronous orbit. Provides environmental and design data for an AOTV.
AC	Atlas Centaur	Intermediate Class Expendable Launch Vehicle.
ACES	Acoustic Containerless Experiment System	Technical demonstration to obtain early microgravity tests of gas transport phenomena in a 3-axis levitation furnace.
ADSF	Automatic Directional Solidification Furnace	Technology demonstration of directional solidification of magnetic materials, immiscibles, and IR detection materials.
AF Polar Bear	Air Force Polar Bear	Study atmospheric effects on electromagnetic propagation.
AFE	American Flight Echocardiograph	Collects quantitative in-flight data on cardiovascular changes in the crew.
AFITV	Air Force Instrumented Test Vehicle	Anti-satellite target vehicle.
AFP-675	Cryogenic Infrared Radiance Instrument for Shuttle (CIRRIS)	Collects infrared data to support Strategic Defense Initiative program.
ALFE	Advanced Liquid Feed Experiment	Demonstrates performance of liquid feed system components in low-gravity environment.
ALT	Altitude	Orbit altitude in nautical miles.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
AM	Auxiliary Module	Provides consumables resupply, payload changeout and additional on-orbit volume for the ISF Facility Module (FM).
AMOS	Air Force Maui Optical Station	Technology development/geophysical environment study. Calibrate AMOS ground-based electro-optical sensors and study on-orbit plume phenomenology using the Shuttle as a test object.
AMPTE	Active Magnetosphere Particle Tracer Experiment	Satellite to study transfer of mass from the solar wind to the magnetosphere.
ANS	Astronomical Netherlands Satellite	Study the sky in ultraviolet and x-ray from above the atmosphere.
APE	Aurora Photography Experiment	Enhance understanding of the geographic extent and dynamics of the aurora.
ARABSAT	Arab Satellite	Communications satellite of the Arab Satellite Communications Organization.
ARC	Aggregation of Red Cells	Studies aggregation of red cells and blood viscosity under low-g conditions.
ASC	American Satellite Company	A satellite to provide commercial communication service to continental United States, Hawaii, Alaska, and Puerto Rico.
ASP	Attitude Sensor Package	Foreign Reimbursable Hitchhiker-G payload.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
ASTRO	Astronomy	Program designed to obtain ultraviolet (UV) data on astronomical objects using a UV telescope.
ATLAS	Atmospheric Laboratory for Applications and Science	Measures long term variability in the total energy radiated by the sun and determines the variability in the solar spectrum.
ATLAS I/II		Commercial intermediate class expendable launch vehicle.
AUSSAT	Australian Communication Satellite	Direct broadcast communication satellite which provides services to continental Australia and off-shore territories.
AXAF	Advanced X-Ray Astronomy Facility	A major free flying X-Ray observatory using a high resolution telescope. Designed to operate in orbit for 15 years.
B/U	Back-up	Provides calibration data for a global ozone monitoring program via observations of the Earth's ultraviolet adbedo and the solar ultraviolet spectrol irradiance.
BBXRT	Broad Band X-Ray Telescope	Provides high resolution x-ray spectra for both point and extended sources, including stellar coronae, x-ray, binaries, active agalactic nuclei, and clusters of galaxies.
BIOPLATFORM	Biological Platform	A recoverable free-flyer platform used to conduct life science experiments.
C	Commander	Member of the Shuttle flight crew in command of the flight.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
C360	Cinema 360	35mm motion picture camera for the purpose of photographing crew and mission activities.
CANEX	Canadian Experiment	Canadian experiment conducted by Canadian Payload Specialist.
CAPL	Capillary Pump Loop Experiment	Experiment to quantify behavior of a full-scale capillary pumped loop heat transfer system in microgravity.
CASSINI		Saturn Orbiter/Titan Probe complements CRAF mission by the study of physically and chemically primitive objects. Includes a rendevous with Saturn.
CBDE	Carbonated Beverage Dispenser Evaluation	Pepsico, Inc. experiment to evaluate packaging and dispensing techniques for space flight consumption of carbonated beverages.
CFES	Continuous Flow Electrophoresis System	Demonstrates the technology of pharmaceutical processing in space.
CHAMP	Comet Halley Active Monitoring Program	Observes Comet Halley on STS flights.
CHROMEX	Chromosomes Experiment	Investigation of the effects of space flight on plant tissue growth.
CLOUDS	Structures Photography Experiments	Cloud formation, dissipation and opaqueness observations.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
CMG	Commercial Middeck-Galley	An Office of Commercial Programs payload utilizing the Orbiter Middeck Accommodations Rack.
CNCR	Characterization of Neurospora Circadian Rhythms in Space	Microgravity effects on circadian rhythms of neurospora.
COBE	Cosmic Background Explorer	Determines the spectrum anistropy of cosmic microwave background..
COLDSAT	Cyrogenic On Orbit Liquid Depot-Storage and Transfer	Zero-g cryogenic fluids transfer experiment.
COMSTAR		Communications satellite for COMSAT.
CRAF	Comet Rendevous Astroid Fly-by	Explores two primitive bodies to gather new information on the origin and evolution of the solar system, prebiotic chemical evolution and the orgin of life, and astrophysical plasma dynamics and processes.
CRRES	Combined Release and Radiation Effects Satellite	Satellite involving Active Plasma Experiments and the study of radiation effects of various spacecraft components.
CRUX	Cosmic Rays Upset Experiment	Studies on-orbit cosmic ray environments and monitors upsets on microcircuit devices.
CRW	Crew	The Shuttle flight crew for a particular mission.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
CSI (Mast)	Controls Structure Interaction (Mast)	Experiments which are part of the OAST Control of Flexible Structures program. Project to deploy structures in a microgravity environment from the Shuttle.
CTM	Collapsible Tube Mast	Foreign Reimbursable Hitchhiker-G payload.
CVTE	Chemical Vapor Transport Experiment	Commercial experiment utilizing the Orbiter middeck.
CXE	Commercial Cross-bay Carrier (EOS type)	An Office of Commercial Programs payload using an EOS type cross-bay carrier.
CXH	Commercial Cross-bay Carrier	An Office of Commercial Programs payload using a Hitchhiker-M type cross-bay carrier.
DAD	Dual Air Density	Measures global density of upper atmosphere and lower exosphere.
DCE	Droplet Combustion Experiment	Conduct droplet combustion experiments in microgravity to obtain fundamental measurements of burning rates and diameters.
DEE	Dexterous End Effector	Demonstrates a sensor for the Shuttle RMS which will allow for more precise crew control.
DFI PLT	Development Flight Instrumentation Pallet	A pallet used to accommodate the DFI used on the first four Shuttle flights.
DFVLR		Federal German aerospace research establishment.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
DMOS	Diffusive Mixing of Organic Solutions	Grow crystals of organic compounds for research programs for the 3M Corporation's Science Research Laboratory.
DOD	Department of Defense	
DS	Docking System	Docking system for use in assembly and servicing of the ISF.
DUR	Duration	Mission duration of each Shuttle flight.
DXS	Diffuse X-ray Spectrometer	Makes spectral observations of the diffuse galactic soft X-ray background to determine the ionic and elemental abundances and the plasma temperature of the hot phase of the interstellar medium.
EASE/ACCESS	Experimental Assembly of Structures in EVA/Assembly Concept for Construction of Erectable Space Structures	Obtains human factors data during assembly of structures in space during Extra Vehicular Activity.
ECT	Emulsion Chamber Technology	Evaluation and validation of high speed particle chamber technology and associated shielding techniques.
EDO	Extended Duration Orbiter	Kit added to Orbiter to extend energy resources to support mission duration up to sixteen days per kit.
EEVT	Electrophoresis Equipment Verification Test	Technology demonstration of apparatus to evaluate the effects of electrophoresis on biological cells in 0-g.

PAYLOAD/ACRONYM	NAME	DESCRIPTION
ELRAD	Earth-Limb Radiance Equipment	Obtain measurements of earth-limb radiance for various positions of the sun from near limb up to 9 degrees below earth horizon.
ELV	Expendable Launch Vehicle	
EO	Escape Orbit	
EOIM	Evaluation of Oxygen Interaction with Materials	Determines effects of atomic oxygen degradation on 1100 candidate materials.
EOS	Electrophoresis Operations in Space	A carrier developed for the planned follow-on to the Continuous Flow Electrophoresis System.
ERBS	Earth Radiation Budget Satellite	Collects global earth radiation budget data.
ESA	European Space Agency	
ESMC	Eastern Space and Missile Center	USAF organization headquartered at Patrick AFB, Florida.
EURECA	European Retrievable Carrier	Platform placed in orbit for six months offering conventional services to experimenters.
EUVE	Extreme Ultraviolet Explorer	Produces definitive sky map and catalog of extreme ultraviolet portion of electromagnetic spectrum (100-1000 angstroms).
EXOSAT	ESA X-Ray Satellite	Provides continuous observations of x-ray sources.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
EXPLORER A		Free flying scientific spacecraft that may be solar, celestial or earth pointing.
FASE	Fast Auroral Snapshot Explorer	An investigation of the processes operating within the auroral region.
FDE	Fluid Dynamics Experiment	A package of six experiments flown on the middeck that involve simulating the behavior of liquid propellants in low gravity.
FEA	Fluids Experiment Apparatus	A middeck payload sponsored by OCP and Rockwell International as part of a Joint Endeavor Agreement to perform floating zone crystal growth processing investigations on selected semi-conductor materials.
FEE	French Echocardiograph Equipment	Obtains on-orbit cardiovascular system data.
FLT	Flight	The flight sequence number for Shuttle missions.
FLT OPPTY	Flight Opportunity	A planned Shuttle flight without assigned payloads. Use of flight opportunities by payloads which slip out of their planned time frame will avoid major restructuring of the manifest, maintaining greater schedule stability for payload programs.
FLTSATCOM	Fleet Communication Satellite	U.S. Navy communications satellite.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
FM	Facility Module	A man-tended module in support of ISF providing space for middeck locker inserts and common racks for payload accommodations.
FPE	French Postural Experiment	Studies sensory-motor adaptations in weightlessness.
FR	Foreign Reimbursable	Foreign reimbursable Hitchhiker-G type payload.
FSC	Fleet Satellite Communications	U.S. Navy communications satellite (same as FLTSATCOM).
FSS	Flight Support System	Support system used for revisit missions.
FTS-DTF	Flight Telerobotic Servicer Demonstration Test Flight	Flight test of a Telerobotic concept for Space Station attached payload assembly and maintenance, platform and satellite servicing, space station and maintenance assembly inspection.
GALAXY		Hughes communications satellite.
GALILEO		Investigates the chemical composition and physical state of Jupiter's atmosphere and satellites.
GAS BRIDGE	Getaway Special Bridge	Structure in the payload bay that can hold up to twelve GAS canisters.
GEOSTAR		Interactive radiodetermination satellite.
GEOTAIL		Explore Geotail of the Earth Plasma Physics.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
GHCD	Growth Hormone Concentration & Distribution in Plants	Microgravity effects on growth hormone distribution of various plant life.
GLOMR	Global Low Orbit Message Relay	Packet data relay satellite.
GLOW		Atmospheric luminosities investigation.
GOES	Geostationary Operational Environmental Satellite	NOAA weather satellites.
GP	Gravity Probe	Scientific probe to test Einstein's Theory of Relativity.
GRO	Gamma Ray Observatory	Investigates extraterrestrial gamma-ray sources.
GSO	Geosynchronous Orbit	
GTO	Geosynchronous Transfer Orbit	
HC-XX	Hughes Communications	Series of commercial communications satellites.
HCMM	Heat Capacity Mapping Mission	Produces thermal maps for discrimination of rock types, mineral resources, plant temperatures, soil moisture, snow fields, and water runoff.
HE	High Eccentricity Orbit	
HEAO	High Energy Astronomical Observatory	Satellite to study energetic radiation from space.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
HELIO	Heliocentric	
HH-G	Hitchhiker-Goddard	A Shuttle cargo bay payload carrier system for side wall experiments.
HH-M	Hitchhiker-Marshall	A Shuttle cargo bay across-bay carrier system for small experiments.
HILAT		Evaluate propagation effects of disturbed plasmas on radar and communications systems.
HME	Handheld Microgravity Experiment	Provides for middeck experiments of limited scope in order to allow for low-cost, timely testing of concepts or procedures, or the early acquisition of data.
HPCG	Handheld Protein Crystal Growth	Develops techniques to produce in low-g protein crystals of sufficient size and quality to permit molecular analysis by diffraction techniques.
HPE	Heat Pipe Experiment	Foreign Reimbursable Hitchhiker-G payload.
HPTE	High Precision Tracking Experiment	Demonstrates ability to propagate a low power laser beam through the atmosphere.
HS-376 RET	HS-376 Retrieval	Salvage of HS-376 communication satellites launched on the tenth Shuttle mission.
HST	Hubble Space Telescope	Observes the universe to gain information abouts its origin, evolution and disposition of stars, galaxies, etc.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
HST-REV	Hubble Space Telescope-Revisit	Revisit mission to the Hubble Space Telescope to replace science instruments on other orbital replacement units (ORU's).
IBSE	Initial Blood Storage Equipment	Evaluates changes in blood tissue during various storage conditions.
IBSS	Infrared Background Signature Survey	Obtains infrared measurements on rocket plumes, shortwave infrared Earth-limb, Shuttle environment, and chemical release from the payload bay while detached in proximity to the Orbiter.
ICBC	IMAX Cargo Bay Camera	
IECM	Induced Environment Contamination Monitor	A package of ten instruments designed to fly in the Orbiter payload bay on a special pallet to check for contamination in and around the Orbiter. It also has the capability to be operated on the end of the RMS outside of the payload bay.
IEF	Isoelectric Focussing Experiment	Gathers experimental data on the extent of electro-osmosis in space.
IEH	International Extreme-UV Far-UV Hitchhiker	Hitchhiker experiment to study ultraviolet emissions.
IFCE/ESA	In-Flight Contamination Experiment/ESA	A group of sensors mounted on the ESA Mast to study the contamination environment within 15 meters above the Shuttle bay.

PAYLOAD/ACRONYM	NAME	DESCRIPTION
IG	Igloo	Structure which provides a pressurized and thermally controlled environment for Spacelab pallet subsystems.
IMAX	IMAX Systems Corp., Toronto, Ontario, Canada	A large screen motion picture format used by the NASA/ Smithsonian project documenting significant space activities.
IML	International Microgravity Laboratory	Series of microgravity missions devoted to material and life sciences studies.
INCL	Inclination	Orbit inclination in degrees.
INMARSAT	International Maritime Satellite Organization	PAM-D2 class communications satellite to be used for international maritime communications services.
INSAT	Indian Satellite	Communication and meteorological satellite for the government of India.
INTELSAT	International Tele-communications Satellite	International telecommunications satellite network for the International Telecommunications Satellite Organization.
IOCM	Interim Operational Contamination Monitor	Measures molecular and particulate contamination in the cargo bay from prelaunch to post-landing.
IR-IE	Infrared Imaging Equipment	Infrared video camera used to measure temperature gradients on the Orbiter surface.
IRAS	Infrared Astronomical Satellite	All sky survey for objects that emit infrared radiation.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
IRCFE	Infrared Communications Flight Experiment	Demonstrates the feasibility of using diffuse infrared light as a carrier for STS crew communications.
IRIS	Italian Research Interim Stage	Italian upper stage for use on the Shuttle.
IRT	Integrated Rendezvous Radar Target	A target for testing of Shuttle Orbiter rendezvous techniques and capabilities in orbit.
ISAIAH	Israeli Space Agency Investigation About Hornets	Gravity perceptions by hornets and their reactions to changes in gravity.
ISC	International Space Corporation	Commercial joint endeavor activity.
ISF	Industrial Space Facility	Commercially-owned, man-tended orbiting facility for research and manufacturing activities.
ITV	Instrumented Test Vehicle	Target for Anti Satellite.
IUS	Inertial Upper Stage	Upper stage system for Shuttle and Titan.
IUTE	Industry University Technology Experiment	Series of Space Technology experiments.
L3	Latitude/Longitude Locator	Tests the capability of a space sextant/camera system to locate earth surface targets within 10 nautical miles.
LADD	Lens Antenna Deployment Demonstration	To demonstrate repeated deployment of a membrane antenna including reliability, flatness, etc.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
LAGEOS	Laser Geodynamics Satellite	Spherical satellite covered with retroflectors which are illuminated by ground-based lasers to determine precise measurements of the Earth's crustal movements. Satellite is totally passive.
LDEF	Long Duration Exposure Facility	Free-flying satellite providing accommodations for experiments requiring long-duration exposure to the space environment.
LEO	Low Earth Orbit	
LFC	Large Format Camera	Acquire synoptic, high-resolution images of the Earth's surface.
LIFESAT	Life Sciences Satellite	Life science flights with micro-gravity as the primary objective.
LITE	Lidar In-Space Technology Experiment	Project to demonstrate the Laser Detection and Ranging (Lidar) solid state system from space.
LM	Long Module	Spacelab Crew Module.
LO	Lunar Observer	Geological, elemental, gravity, and magnetic field mapping of moon.
M88-1	M88-1	Evaluates the capability of man in space to enhance air, naval, and ground force operations and assesses the feasibility of observations of space debris while in orbit.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
MACSAT	Multi-Access Communications Satellite	DOD communications satellite.
MAGELLAN		Spacecraft designed to globally map the surface of Venus.
MAGSAT	Magnetic Field Satellite	Map the magnetic field of the earth.
MBB	Messerschmitt-Boelkow-Blohm	A German industrial aerospace company.
MD	Middeck	
MLE	Mesoscale Lightning Experiment	Record and observe the visual chracteristics of large scale lightning as seen from space using onboard TV cameras.
MLR	Monodisperse Latex Reactor	Produces monodisperse latex particles in the two to forty micron range.
MO	Mars Observer	Spacecraft to study the surface, climate, gravitational, and magnetic fields of the planet, Mars.
MO II	Mars Observer II	Spacecraft to study Martian upper atmosphere and ionosphere. Precursor to Mars Rover Sample Return Mission.
MORELOS		Mexican communication satellite system.
MPESS	Mission Peculiar Equipment Support Structure	Experiment carrier.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
MPSE	Mexican Payload Specialist Experiment	Experiment performed by a Mexican payload specialist on the Shuttle flight which deployed the MORELOS satellite.
MS	Mission Specialist	A member of Shuttle flight crew primarily responsible for payload activity.
MSAT	Mobile Satellite	Satellite for developing advanced ground technologies and techniques for mobile communications via satellite.
MSL	Materials Science Laboratory	A payload which remains attached to the Shuttle to perform materials processing experiments in low-g.
N/A	Not Applicable	
NATO	North Atlantic Treaty Organization	Communications satellite for NATO.
NOAA	National Oceanic and Atmospheric Administration	Series of operational environmental satellites in polar orbit.
NOSL	Night/Day Optical Survey of Lightning	Optical survey of lightning.
NOVA		Advanced Navy Navigation Satellite.
NTE	NASA Technology Experients	
OASIS	OEX Autonomous Supporting Instrumentation System	Collects environmental data in the Orbiter during dynamic STS flight phases.
OAST	Office of Aeronautics and and Space Technology	

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
OAST-1	Office of Aeronautics and Space Technology-1	A payload which remained attached to the Shuttle to demonstrate a large light-weight solar array capable of being restowed in flight.
OEX	Orbiter Experiments	Series of engineering experiments on the Shuttle.
OIM	Oxygen Interaction with Materials	Tests which obtained quantitative rates of oxygen interaction with materials used on the Orbiter and advanced payloads.
OMV	Orbital Maneuvering Vehicle	A deployable retrievable vehicle to be flown on the STS to retrieve or insert payloads in orbits different from the Orbiter.
ORS	Orbiter Refueling System	An experiment to demonstrate the ability of the STS to perform on-orbit satellite refueling.
OSCAR		U.S. Navy Navigational Satellite.
OSL	Orbiting Solar Laboratory	Provide detailed data on the sun, to augment our studies of distant stars and cosmic processes.
OSS-1	Office of Space Science-1	Contamination monitor,microabrasion foil experiment, vehicle charging and potential experiment,Shuttle-Spacelab induced atmosphere,solar flare x-ray polarimeter, solar ultraviolet spectral irradiance monitor, plant growth unit, thermal canister "
OSTA-1	Office of Space and Terrestial Applications	Shuttle attached payload using the Shuttle Imaging Radar (SIR-A) to obtain high resolution images of earth.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
OSTA-2	Office of Space and Terrestial Applications	Microgravity experiments.
OSTA-3	Office of Space and Terrestial Applications	Acquire photographic and radar images of the Earth's surface.
P	Pilot	A member of the Shuttle crew whose primary responsibility is to pilot the Orbiter.
PAL or PALL	Pallet	Spacelab Pallet structure
PALAPA		Synchronous satellite communication system for the Republic of Indonesia.
PAM	Payload Assist Module	An upper stage system used on the Shuttle and the Delta ELV.
PCG	Protein Crystal Growth	PCG activity in controlled temperature module.
PDRS/PFTA	Payload Deployment and Retrieval System/Payload Flight Test Article	First object to be deployed and retrieved by the remote manipulator system and is used to test reaction of RMS joints.
PIONEER VENUS		Remote sensing and direct measurements of Venus and its surrounding environment.
PLAN	Planetary Trajectory	High Energy Trajectory to Outer Planets.
PM	Polymer Microstructure and Morphology in Microgravity	Determines effects of weightlessness on morphological formation of polymers as they undergo physical transition.

PAYLOAD/ACRONYM	NAME	DESCRIPTION
POLAR		Polar Auroral Plasma Physics.
POP	Polar Orbiting Platform	U.S. platforms will orbit Space Station Freedom and perform remote sensing experiments.
PPE	Phase Partitioning Experiment	Study separation behavior of two phase system generated by the mixture in water of polyglucose and polyethylene glycol.
PS	Payload Specialist	A member of the Shuttle crew with primary responsibility for a particular payload or experiment.
PUR	Payload Under Review	
PVTOS	Physical Vapor Transport of Organic Solids	Commercial joint endeavor activity with the 3M Corporation.
RADARSAT	Radar Satellite	Remote free flyer sensing satellite that will monitor land, sea and ice for five years over the poles (U.S./ Canadian).
RCA	RCA American Communications Inc., (now GE American Communications, Inc.)	Series of communications satellites.
RDE	Radiation Detection Experiment	Demonstrates new radiation detection technology.
REFLUX	Return Flux Experiment	Office of Aeronautics and Space Technology experiment carried on a Hitchhiker-G.

PAYLOAD/ACRONYM	NAME	DESCRIPTION
RME	Radiation Monitoring Equipment	Measures gamma radiation levels in the Shuttle environment.
RMS	Remote Manipulator System	A Canadian developed, remotely controlled (from the Orbiter crew cabin) arm for deployment and/or retrieval of payloads from the Orbiter payload bay.
ROSAT	Roentgen Satellite	NASA/West German cooperative satellite for studying X-rays.
S	Scout	Small Class Expendble Launch Vehicle.
S/C GLOW	Spacecraft Glow	An experiment to study and evaluate the effects of temperature on the glow characteristics of materials exposed to high velocity atomic elements.
S/R-A	Shuttle Imaging Radar-A	
SAGE	Strategic Aerosol and Gas Experiment	Map vertical profiles of the ozone, aerosol, nitrogen Rayleigh molecular extinction around the globe.
SALT	Special (Purpose Inexpensive Satellite) Altimeter	DOD payload.
SAM	Shuttle Activation Monitor	Collects gamma and x-ray data as a function of geomagnetic location from spacecraft materials.
SAMPE	Solar, Anomalous, and Magnetospheric Particle Explorer	A study for solar energetic particles, anomalous cosmic rays, galactic cosmic rays, and magnetospheric electrons.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
SAMPIE/ESA	Solar Array Module Plasma Interaction Experiment/ European Space Agency	An experiment to study the plasma interaction effects on solar arrays mounted on the ESA MAST which is extended from the Shuttle Bay.
SAREX	Shuttle Amateur Radio Experiment	Space to ground voice and slow scan TV.
SAS	Space Adaptation Syndrome	Study x-ray sources within and beyond the Milky Way galaxy.
SATCOM		RCA communications satellite.
SBS	Satellite Business Systems	All digital domestic communication system servicing large industry, the government, etc.
SDS	Solar Disk Sextant	Studies solar pulsations, oblateness, and size.
SE	Student Experiment	Experiments for the Shuttle Student Involvement Program (SSIP).
SFMD	Storable Fluid Management Demonstration	Demonstrates transfer of room-temperature fluids in zero-g using various transfer techniques.
SFP	Space Flight Participant	
SFU-RET	Space Flyer Unit-Retrieval	A reusable, retrievable unmanned free flyer to be launched on the Japanese H-II rocket and retrieved by Shuttle.
SHARE	Space Station Heat Pipe Advanced Radiator Element	Demonstrates and quantifies the thermal performance of a high capacity, 50 foot, space constructible, heat pipe radiator element.

PAYLOAD/ACRONYM	NAME	DESCRIPTION
SHEAL	Shuttle High Energy Astrophysics Laboratory	Obtains images, spectra and timing data on celestial x-ray sources and the spectrum at the 30 ft. x-ray background.
SHOOT	Super Fluid Helium On Orbit Transfer Demonstration	Demonstrates the feasibility of on-orbit transfer of superfluid helium using thermomechanical techniques.
SIRTF	Space Infrared Telescope Facility	Will span the infrared part of the spectrum with a thousand-fold increase in sensitivity.
SKIRT	Spacecraft Kinetic Infrared Test	Measures the infrared emissions produced from spacecraft and optical surfaces in low earth orbit.
SKYNET	SKYNET	United Kingdom military communication satellite.
SL-D1	Spacelab D-1	First dedicated German Spacelab mission.
SL-D2, -D3	Spacelab D2, D3	Second and third in a series of German Spacelab Missions. Objectives include microgravity research and technology preparation for Space Station use. NASA participation planned on D2 and under discussion for D3.
SL-J	Spacelab J	Combined Japanese/NASA Spacelab mission. Objectives include life sciences, microgravity, and technology research.
SLS	Space Life Sciences Laboratory	Investigates the effects of weightlessness exposure using both man and animal specimens.
SLSTP	Space Life Sciences Training Program	Series of payloads to support a broad range of life science studies.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
SMEX	Small Explorer	Payloads being designed to fly on Small Class ELV.
SMR	San Marco Range	
SMRM	Solar Maximum Repair Mission	Conducts a technology demonstration of the STS capability to rendezvous, service, checkout and deploy.
SOHO	Solar Heliospheric Observatory	Provides optical measurements as well as plasma field and energetic particle observations of the sun system for studies of the solar interior, atmosphere and solar wind.
SOLAR PROBE		Study unexplored region of the solar atmosphere, measure electromagnetic fields and study the particle populations close to the sun.
SOOS	Stacked OSCAR on Scout	Two OSCAR satellites.
SPACEHAB		Commercially-owned pressurized module for conducting experiments in a man-tended environment.
SPACELAB 1		Demonstrated Spacelab's capabilities for multidisciplinary research.
SPACELAB 2		Demondtrated Spacelab's capabilities for multidisciplinary research and verified system performance.
SPACELAB 3		Dedicated materials processing mission emphasizing 0-g research.
SPARTAN-HALLEY		Search for molecules containing nitrogen, carbon or sulfur and observes the UV spectrum between 2100 and 3400A.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
SPAS	Shuttle Pallet Satellite	Payload Carrier developed by MBB, W. Germany.
SPAS-01/01A	German Shuttle Pallet Satellite	Demonstrates the utilization of the MBB platform and systems as a carrier for science experiments.
SPAS-CRISTA	Cryogenic Infrared Spectrometer Telescope for Atmosphere	A U.S./German Joint Aeronomy Payload intended to explore the variability of the atmosphere and to provide measurements that will complement those provided by UARS.
SPAS-ORFEUS	Orbiting and Retrievable Far and Extreme Ultraviolet Spectrometer	A German developed payload to explore the distribution and character of absorbing material in the solar neighborhood and to perform direct observations of the direct interstellor component.
SPTN	Shuttle Pointed Autonomous Research Tool for Astronomy	X-ray astronomy, medium energy survey mission, using retrievable free flyer.
SPTN-DOD-XX	SPARTAN-DOD Payload	A series of DOD SPARTAN missions.
SPTN-T	SPARTAN-Target	Target for OMV-1 demonstration flight.
SRAD/TPITS	Shuttle Radiator Assembly Demonstration/Two Phase Integrated Thermal System	Evaluates on-orbit thermal performance of a representative portion of an integrated two-phase thermal bus and on-orbit constructability of Space Station radiator elements using Remote Manipulator System and Extra Vehicular Activity techniques.
SRL	Space Radar Laboratory	Series of flights to acquire radar images of the Earth's surface. The images will be used for making maps, interpreting geological features, and resources studies.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
SS	Sun Synchronous	
SSBUV	Shuttle Solar Backscatter Ultra-Violet Instrument	Series of flights to measure ozone characteristics of the atmosphere.
SSF	Space Station Freedom	Series of flights to assemble and operate a Phase One Space Station.
SSIP	Shuttle Student Involvement Program	
SSS	Satellite Servicer System	Demonstrates capability to perform autonomous fluid resupply within the Shuttle bay.
STARLAB		DOD Spacelab mission.
STEX	Sensor Technology Experiment	Demonstrates radiation measurement technology.
STP-XX	Space Test Program-OX	A series of payloads which include DOD STP secondary experiments.
STTP	Life Sciences Space Technology Training Program	Develop and encourage interest on the part of college students in space biology and medicine.
SWAS	Submillimeter Wave Astronomy Satellite	Study how molecular clouds collapse to form stars and planetary systems.
SYNCOM	Hughes Geosynchronous Communication Satellite	Provides communication services from geosynchronous orbit principally to the U.S. government.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
TAPS	Two Axis Pointing System	
TBD	To Be Determined	
TDRS	Tracking and Data Relay Satellite	Series of NASA tracking, data and communications satellites to replace the ground based network.
TELESAT	Canadian Telecommunication Satellite	Communication satellite built for Telesat Canada to provide voice and TV coverage to trans-Canada network of Earth stations.
TELSTAR	AT&T Communications Satellite	AT&T COMSTAR replacement -- provides communication services to the continental U.S., Alaska, Hawaii, and Puerto Rico.
TEMP	Two Phase Mounting Plate Experiment	Operates a mechanically pumped two phase head acquisition transport and rejection system in microgravity.
TFS	Thermal and Fluid Systems Test	Evaluates operational components in a zero-gravity environment features of thermal and fluid systems of the Space Station Freedom.
TIP	Transit Improvement Program	Improved configuration - Transit Navigation Satellite
TIS	Teacher in Space	Middeck locker supporting the Space Flight Participant Program's teacher in space.
TLD	Thermoluminescent Dosimeter	Obtains gamma ray measurements of the Shuttle environment.

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
TOMS	Total Ozone Mapping Spectrometer	Study of Stratospheric ozone.
TOS	Transfer Orbit Stage	
TSS	Tethered Satellite System	System capable of deploying and retrieving satellite attached by a wire tether from distances up to 100 km from the Orbiter.
U.S.	United States	
UARS	Upper Atmosphere Research Satellite	Satellite to study physical processes acting within and upon the stratosphere, mesosphere, and lower thermosphere.
UFO	Ultra High Frequency Follow-On	U.S. Navy communications satellite.
ULYSSES	Formerly ISPM (International Solar Polar Mission)	Investigates the properties of the heliosphere (sun and its environment).
USAF-01	USAF Satellite	Small ELV class spacecraft -- specifics TBD.
USML	United States Microgravity Laboratory	Series of flights of a microgravity materials processing laboratory attached to the Shuttle.
USMP	United States Microgravity Payload	Conduct materials processing experiments in the microgravity environment available in the Orbiter cargo bay while in low earth orbit.
USS	Unique Support Structures	

**** PAYLOAD/ACRONYM LIST ****

PAYLOAD/ACRONYM	NAME	DESCRIPTION
UVLIM	Ultraviolet Limb Imaging Experiment	Establishes the earth and space extreme UV environment and observes space structure and time variation in segments of the 1100-3000 angstrom range.
WAMDII	Wide Angle Michelson Doppler Imaging Interferometer	Set of instruments which study upper atmospheric winds from the Shuttle.
WESTAR	Western Union Telegraph Communication Satellite	A C-band satellite to replenish and expand the Westar system (Western Union domestic communication system).
WFF	Wallops Flight Facility	
WIND		Satellite to measure solar wind input to magnetosphere.
WISP	Waves in Space Plasmas	An attached payload to conduct a series of active experiments using radio transmitters to perturb the space plasma environment.
WSMC	Western Space and Missle Center	A USAF organization with Headquarters at Vandenberg Air Force Base.
XTE	X-Ray Timing Explorer	A payload to be used in Earth orbit to investigate the physical nature of compact X-Ray sources by studying fluctuations in X-Ray brightness over time-scales ranging from microseconds to years.

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Payload flight assignments, NASA mixed fleet